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Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities

Executive Summary

One out of every two U.S. adults is living with a chronic disease, such as heart disease, cancer, or diabetes.¹ These diseases contribute to disability, premature death, and health care costs.^{2,3} Increasing people's physical activity levels will significantly reduce their risk of chronic diseases and related risk factors.^{4,5} Because physical activity has numerous other health benefits—such as supporting positive mental health and healthy aging—it is one of the most important actions people can take to improve their overall health.^{4,5}

Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities recognizes the importance of physical activity for people of all ages and abilities. It calls on Americans to be more physically active through walking and calls on the nation to better support walking and walkability. Improving walkability means that communities are created or enhanced to make it safe and easy to walk and that pedestrian activity is encouraged for all people.⁶ The purpose of the *Call to Action* is to increase walking across the United States by calling for improved access to safe and convenient places to walk and wheelchair roll and by creating a culture that supports these activities for people of all ages and abilities.

The *Call to Action* includes five strategic goals to promote walking and walkable communities in the United States: make walking a national priority; design communities that make it safe and easy to walk for people of all ages and abilities; promote programs and policies to support walking where people live, learn, work, and play; provide information to encourage walking and improve walkability; and fill surveillance, research, and evaluation gaps related to walking and walkability. Action by multiple sectors of society, as well as by families and individuals, will be needed to achieve these goals.

Physical Activity: An Essential Ingredient for Health

Being physically active is one of the most important steps that people of all ages and abilities can take to improve their health.⁵ Increasing people's physical activity level will significantly reduce their risk of chronic disease and premature death and support positive mental health and healthy aging.^{4,5}

Chronic Disease in the United States

Chronic diseases are the leading causes of death in the United States and major contributors to disability.³ In 2012, almost 50% of U.S. adults, or 117 million people, were living with a chronic disease, and of this group, about 60 million were living with two or more chronic diseases.¹ Chronic diseases also ranked as four of the top five most costly medical conditions.⁷

Benefits of Physical Activity

Physical activity can reduce illness from chronic diseases and premature death.^{4,5} Regular physical activity helps prevent risk factors for disease (such as high blood pressure and weight gain) and protects against multiple chronic diseases (such as heart disease, stroke, some cancers, type 2 diabetes, and depression).^{4,5} In children and adolescents, physical activity can improve bone health, cardiorespiratory and muscular fitness, and body composition.^{4,5}

People living with chronic disease also benefit from being physically active.^{4,8-20} For example, physical activity can lessen the severity of their condition, as well as prevent disease progression and premature death,^{4,12-16} help manage or reduce symptoms,⁸⁻¹¹ and improve mobility.^{13,16}

Among adults, physical activity is associated with improved quality of life,^{4,21,22} emotional well-being,^{4,23,24} and positive mental health.^{4,23-25} Regular physical activity is also important for healthy aging⁵ and may delay the onset of cognitive decline in older adults.^{4,26-28}

In children and adolescents, some evidence suggests that physical activity can lower levels of anxiety and depression.^{4,29-31} When schools encourage participation in physical activity as part of physical education, recess, classroom lessons, or extracurricular activities, students can also improve their academic performance.^{32,33}

Physical Activity Guidelines for Americans

To obtain substantial health benefits, the *2008 Physical Activity Guidelines for Americans* recommends that adults get at least 150 minutes of moderate-intensity aerobic physical activity or 75 minutes of vigorous-intensity physical activity, or an equivalent combination, each week and that children and adolescents be active for at least 60 minutes every day.⁵ People

who are inactive and those who do not yet meet the guidelines are strongly encouraged to work toward this goal. Adults with disabilities who are unable to meet the guidelines should avoid inactivity and try to get regular physical activity according to their abilities.⁵

Physical Activity in the United States

Despite the health benefits, only one-half of U.S. adults reported levels of physical activity consistent with the guideline for aerobic physical activity in 2013.³⁴ Adults who were male, younger, white, or Asian or who had higher levels of education were more likely to have met the aerobic physical activity guideline.³⁴

Only 27% of high school students reported levels of physical activity that met the guideline for 60 minutes of physical activity a day in 2013.³⁵ Male high school students and students in lower grade levels were more likely to meet the guideline.^{34,35}

Why Focus on Walking as a Public Health Strategy?

Strong evidence exists that physical activity has substantial health benefits.^{4,5} People can get these benefits through brisk walking or by adding brisk walking to other physical activities.⁵ Walking is an excellent way for most Americans to increase their physical activity. It is also a powerful public health strategy for several reasons.

Walking does not require special skills, facilities, or expensive equipment and is an easy physical activity to begin and maintain as part of a physically active lifestyle.³⁶ Most people are able to walk, and many people with disabilities are able to walk or move with assistive devices, such as wheelchairs or walkers. Walking has a lower risk of injury than vigorous-intensity activities.^{5,37} Walking also may be a good way to help people who are inactive become physically active because walking can be easily adapted to fit one's time, needs, and abilities.^{5,37}

Walking is a common form of physical activity. In 2010, more than 60% of adults reported walking 10 minutes or more in the past week for transportation or leisure.³⁸ Adults with more education, those who were white or Asian, and those who were younger were more likely than their counterparts to report any walking.^{38,39}

People walk for many purposes, such as for transportation to get to school, work, a store, or the library or for leisure to have fun, socialize with friends or family, walk their dog, or improve their health. Because walking is multipurpose, it provides many opportunities for people to incorporate physical activity into their busy lives. In 2010, about half of U.S. adults reported walking during their leisure time and less than one-third reported walking for transportation.⁴⁰

Communities can benefit when they implement strategies that make them more walkable and when more people walk. Communities designed to be walkable can improve safety not only for people who walk but for all community members.⁴¹⁻⁴³ Walkable communities and communities where more people walk offer opportunities for personal interaction and social involvement.⁴⁴ Communities designed to be walkable have the potential to reduce air pollution and greenhouse gases because people may choose to walk or bike rather than drive.^{45,46} Finally, walkable communities are attractive places for businesses to locate, which may help local economies thrive.⁴⁷⁻⁴⁹

Why Don't People Walk More?

Many more people could meet the *2008 Physical Activity Guidelines for Americans*⁵ by starting to walk or increasing the amount they walk. Although walking is a popular form of physical activity and can be easily done by most people, barriers to walking do exist.

People report lack of time as one challenge that prevents them from walking or doing other kinds of physical activity.^{50,51} People may struggle to meet the current guideline for regular aerobic physical activity as they cope with competing demands of work, school, home, and caring for themselves and others.

Safety concerns can be a barrier to walking. Several factors can influence pedestrian risk, such as unsafe driver^{41,52,53} and pedestrian behaviors^{41,52-55} and challenging physical environments.^{41,42,53} Perceived traffic dangers may also be barriers to walking. In surveys of parents, the most commonly reported barrier for walking to school was distance to school, followed by traffic-related dangers.^{56,57} Fear of crime or perceptions of an unsafe neighborhood may also be potential barriers to walking.⁵⁸⁻⁶¹

In addition, the ways in which communities are designed and built can present barriers to walking. When everyday destinations are located too far away from home, walking will not be a convenient option.⁶²⁻⁶⁵ Because people are more likely to walk when they use public transportation,^{62,66-73} the lack of an adequate public transit system may mean that opportunities to walk are lost.

Disability, chronic conditions, and age can be barriers to walking. During 2009–2012, 11.6% of U.S. adults aged 18–64 years reported a disability, and adults with disabilities were more likely to be physically inactive than adults without a disability.⁷⁴ Chronic conditions and age can make it difficult for people to walk. For example, people with arthritis may find walking painful.⁷⁵ Older adults and those who are frail may be reluctant to walk because of concerns about falls and subsequent injury.

How to Increase Walking and Improve Walkability

Ultimately, individuals make the decision to walk. However, the decision to walk can be made easier by programs and policies that provide opportunities and encouragement for walking and by improvements to community walkability. Improving walkability means that communities are created or enhanced to make it safe and easy to walk and that pedestrian activity is encouraged for people of all ages and abilities.⁶

Community and street design policies are recommended approaches for increasing physical activity, including walking.^{76,77} Community design can support physical activity, for example, by locating residences within short walking distance of stores, worksites, public transportation, essential services, and schools and by building and maintaining sidewalks or paths between destinations that are well-connected, safe, and attractive.^{76,77} Street design can also support walking and enhance pedestrian safety through measures that improve street lighting and landscaping and reduce traffic speed.^{76,77} Transportation and travel policies and practices that create or enhance pedestrian and bicycle networks and expand or subsidize public transit systems can be another approach to encourage walking for transportation.^{78,79}

Several program and policy strategies are recommended to increase physical activity, including walking. For example,

- **Creation of or Enhanced Access to Places for Walking with Informational Outreach.** Creating or enhancing access to places for physical activity, combined with information to encourage use of these places, is a strategy recommended to increase physical activity.^{80,81} Examples of places for walking include public parks; health, fitness, and recreational facilities; schools, colleges, and universities; malls; senior centers; and worksites.
- **Social support interventions.** Social support interventions increase physical activity by providing supportive relationships for behavior change.⁸² They include actions that provide friendship and support, such as buddy systems, contracts with others to complete specified levels of physical activity, or walking groups.^{80,81}
- **Individually-adapted health behavior change programs.** These programs teach behavioral skills that help participants incorporate physical activity into their daily routines.⁸⁰⁻⁸² Programs usually incorporate some form of counseling from a health professional or trainer to help participants set physical activity goals, monitor their progress toward these goals, seek social support, and use self-reward to reinforce progress.^{82,83}
- **Community-wide campaigns.** A community-wide campaign is a concentrated effort to promote physical activity that combines a variety of strategies such as media coverage, risk factor screening and education, community events, and policy or environmental changes.^{81,84}

What Sectors Are Needed to Help Implement Community Approaches?

Many groups have a role to play to make the United States a nation with safe, easy, and desirable places to walk as part of our daily lives.

Transportation, Land Use, and Community Design

Decisions and plans made by the transportation, land use, and community design sector can affect whether communities and streets are designed to support walking. This sector can change the design of communities and streets through roadway design standards, zoning regulations, and building codes⁷⁶ and improve the pedestrian experience through landscaping, street furniture, and building design.⁸⁵ This sector is also integral in the planning and implementation of public transit systems.

Parks and Recreational and Fitness Facilities

Public parks offer access to places to walk.^{86,87} Health and fitness facilities offer group walking programs and access to places for walking, including places to walk indoors. Better access to parks, playgrounds, and recreational centers may encourage active transportation, such as walking to the location.⁸⁸ Health and fitness facilities should be designed, built, and maintained to be accessible to the entire population, including people with mobility limitations or chronic conditions.

Schools

Schools can provide opportunities for physical activity through physical education, recess, after-school activity programs, and physical activity breaks.^{89,90} and walking can be incorporated into these opportunities. Schools can encourage walking by promoting safe routes for students to walk to and from school. Opening school facilities, such as gyms, playgrounds, fields, and tracks, to the community during nonschool hours is a promising strategy to increase access to physical activity and recreational facilities⁹¹ and increase physical activity levels.⁹²⁻⁹⁴

Colleges and Universities

Walkable campus strategies help students, faculty, and staff members adopt active living behaviors on campus.⁹⁵ Colleges and universities can also educate and train future professionals to recognize their role in promoting walking and walkable communities. This training can be directed to students in health disciplines, as well as to students in other relevant fields, such as architecture, transportation, urban design, and business.

Worksites

Worksites can offer access to on-site facilities or employer-subsidized, off-site exercise facilities to encourage physical activity among employees.^{96,97} They can adopt policies that include brief activity breaks, flexible schedules, and walking meetings as potential strategies to increase participation in worksite physical activity.⁹⁸⁻¹⁰⁰ Incentives and social support programs can also be used to encourage employees' interest and participation in physical activity programs.^{81,100}

Volunteer and Nonprofit Organizations

Volunteer and nonprofit groups can provide access to facilities, programs, and information to promote walking. For example, they can open their facilities and walking programs to the wider community for free or at low cost, or they can organize social support programs. These organizations can also serve as messengers to share information about the benefits of walking and walking programs and ways to improve walkability.

Health Care

Health care professionals can assess patients' physical activity levels and educate patients across their lifespan about the importance of physical activity. Counseling may be especially important for adults who are at higher risk of chronic disease, such as those who are overweight or obese and have additional risk factors for cardiovascular disease.^{101,102} Walking is an especially good activity for health care professionals to promote because most of their patients can walk, and walking can be easily modified to a person's abilities.

Media

The media can be effective in influencing attitudes and changing behaviors, including health behaviors.¹⁰³⁻¹⁰⁶ Media campaigns can be part of effective multicomponent interventions designed to increase physical activity. However, evidence on the effectiveness of stand-alone mass media campaigns to increase physical activity at the population level is inconsistent.¹⁰⁷

Public Health

Public health professionals can conduct research and evaluate programs to determine what works to promote and sustain physical activity, including walking. They can summarize findings about what community approaches work to increase walking and walkability, and they can help other sectors design and implement interventions. They can convene partners across multiple sectors to learn from each other and to develop strategic action plans that efficiently use each partner's expertise and resources. Public health professionals also collect data about walking and walkability to measure and monitor changes over time.

Gaps in Surveillance, Research, and Evaluation

Existing research provides an evidence base about what works to increase walking in the United States. However, additional surveillance, research, and evaluation work is needed to maximize the success of community approaches and address disparities in walking and walkability.

Surveillance

Walking among adults is assessed through self-report in several surveillance systems^{38,108,109} but not in a consistent manner. Surveillance systems that assess walking among children and adolescents mainly collect data on walking for transportation.^{108,110,111} Improvements to existing surveillance systems are needed to establish standard and valid measures of walking that can be used across systems at national, state, regional, and local levels.

No national surveillance system routinely and comprehensively monitors local neighborhood features of a walkable community. Brief survey and on-the-ground audit tools or technological approaches that capture the most important aspects of walkability are needed to increase the feasibility of routinely assessing key features of the environment as part of core questions in surveillance systems.

Research

Existing research demonstrates that broadly defined or multicomponent interventions increase physical activity,^{77,81,82} but it is rarely known which set of individual elements are most effective, necessary, or sufficient to achieve a positive effect while minimizing any negative effects, such as injuries. Effective communication can also be an important component of physical activity programs.⁸¹ However, researchers are not sure which specific messages or combination of messages and other intervention components, such as walking programs and access to places to walk, are best for populations that vary in age, location, race/ethnicity, and socioeconomic status.

Evaluation

Communities across the country are implementing a variety of interventions that promote walking, but many of these interventions are not being adequately evaluated. Evaluation planning should occur early in the development process to identify key stakeholder questions and ensure that adequate resources are allocated to the evaluation.¹¹² Evaluation data would be strengthened by the use of common metrics across studies to allow comparison of the relative cost and effectiveness of various interventions.

Economic Analysis

Additional research is needed to fully describe the economic benefits of adequate levels of physical activity in the United States.¹¹³ Research and evaluation studies should collect data to support economic analysis.^{114,115} In addition, to fully capture the range of costs and savings from changes in environmental design or program implementation, economic analyses may need to consider other potentially quantifiable savings that result from these types of interventions.¹¹⁶⁻¹¹⁸

The Call to Action

The *Call to Action* includes five goals, with related strategies to support walking and walkability in the United States. These strategies will make it easier and safer for people to walk and to use a wheelchair, ride a bike, and be active in other ways. Support for these goals and strategies is needed across many sectors of society, such as transportation, land use, and community design; parks, recreation, and fitness; education; business and industry; volunteer and nonprofit; health care; media; and public health.¹¹⁹ Families and individuals will also need to be involved to make the United States a walkable nation.

Goal 1. Make Walking a National Priority

- Encourage people to promote walking and make their communities more walkable.
- Create a walking movement to make walking and walkability a national priority.

Goal 2. Design Communities that Make It Safe and Easy to Walk for People of All Ages and Abilities

- Design and maintain streets and sidewalks so that walking is safe and easy.
- Design communities that support safe and easy places for people to walk.

Goal 3. Promote Programs and Policies to Support Walking Where People Live, Learn, Work, and Play

- Promote programs and policies that make it easy for students to walk before, during, and after school.
- Promote worksite programs and policies that support walking and walkability.
- Promote community programs and policies that make it safe and easy for residents to walk.

Goal 4. Provide Information to Encourage Walking and Improve Walkability

- Educate people about the benefits of safe walking and places to walk.
- Develop effective and consistent messages and engage the media to promote walking and walkability.
- Educate relevant professionals on how to promote walking and walkability through their profession.

Goal 5. Fill Surveillance, Research, and Evaluation Gaps Related to Walking and Walkability

- Improve the quality and consistency of surveillance data collected about walking and walkability.
- Address research gaps to promote walking and walkability.
- Evaluate community interventions to promote walking and walkability.

Conclusion

Promoting walking offers a powerful public health strategy to increase physical activity. With the *Call to Action*, the U.S. Surgeon General calls on Americans to be physically active and for the nation to better support walking and walkability for people of all ages and abilities. To improve walking and walkability, communities need to be designed to make walking safer and easier; programs and policies need to be available to support and encourage walking; and individuals and families need to support each other to become and stay active. Many partners are already involved, but more engagement is needed to increase the reach, breadth, and impact of these efforts. Walking is an easy and inexpensive way to improve the health and well-being of all Americans. Now is the time to step it up and make walking a national priority.

References

1. Ward BW, Schiller JS, Goodman RA. Multiple chronic conditions among U.S. adults: a 2012 update. *Prev Chronic Dis*. 2014;11:130389.
2. Gerteis J, Izrael D, Deitz D, et al. *Multiple Chronic Conditions Chartbook. AHRQ Publications No. Q14-0038*. Rockville, MD: Agency for Healthcare Research and Quality; 2014.
3. U.S. Burden of Disease Collaborators. The state of U.S. health, 1990-2010: burden of diseases, injuries, and risk factors. *JAMA*. 2013;310(6):591-608.
4. Physical Activity Guidelines Advisory Committee. *Physical Activity Guidelines Advisory Committee Report, 2008*. Washington, DC: U.S. Dept of Health and Human Services; 2008.
5. U.S. Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. Washington, DC: U.S. Dept of Health and Human Services; 2008.
6. Federal Highway Administration. *A Resident's Guide for Creating Safe and Walkable Communities*. Washington, DC: Federal Highway Administration, U.S. Dept of Transportation; 2008. FHWA-SA-07-016.
7. Cohen S. Statistical brief #455: The concentration of health care expenditures and related expenses for costly medical conditions, 2012. Agency for Healthcare Research and Quality. http://meps.ahrq.gov/mepsweb/data_files/publications/st455/stat455.shtml. Accessed April 7, 2015.
8. Fransen M, McConnell S, Hernandez-Molina G, Reichenbach S. Exercise for osteoarthritis of the hip. *Cochrane Database Syst Rev*. 2014;(4):CD007912.
9. Cooney GM, Dwan K, Greig CA, et al. Exercise for depression. *Cochrane Database Syst Rev*. 2013;(9):CD004366.
10. Carek PJ, Laibstain SE, Carek SM. Exercise for the treatment of depression and anxiety. *Int J Psychiatry Med*. 2011;41(1):15-28.
11. Fransen M, McConnell S, Harmer AR, Van der Esch M, Simic M, Bennell KL. Exercise for osteoarthritis of the knee. *Cochrane Database Syst Rev*. 2015;(1):CD004376.
12. Heran BS, Chen JM, Ebrahim S, et al. Exercise-based cardiac rehabilitation for coronary heart disease. *Cochrane Database Syst Rev*. 2011;(7):CD001800.
13. American Diabetes Association. Standards of medical care in diabetes—2014. *Diabetes Care*. 2014;37(suppl 1):S14-S80.
14. Whitworth JA, World Health Organization, International Society of Hypertension Writing Group. 2003 World Health Organization (WHO)/International Society of Hypertension (ISH) statement on management of hypertension. *J Hypertens*. Vol 212003:1983-1992.
15. Hagberg JM, Park JJ, Brown MD. The role of exercise training in the treatment of hypertension: an update. *Sports Med*.

2000;30(3):193-206.

16. Colberg SR, Sigal RJ, Fernhall B, et al. Exercise and type 2 diabetes: the American College of Sports Medicine and the American Diabetes Association: joint position statement executive summary. *Diabetes Care*. 2010;33(12):2692-2696.

17. Thompson PD, Buchner D, Piña IL, et al. Exercise and physical activity in the prevention and treatment of atherosclerotic cardiovascular disease: a statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity). *Circulation*. 2003;107(24):3109-3116.

18. Eckel RH, Jakicic JM, Ard JD, et al. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2014;129(25 suppl 2):S76-S99.

19. Cosman F, de Beur SJ, LeBoff MS, et al. Clinician's guide to prevention and treatment of osteoporosis. *Osteoporos Int*. 2014;25(10):2359-2381.

20. Rock CL, Doyle C, Demark-Wahnefried W, et al. Nutrition and physical activity guidelines for cancer survivors. *CA Cancer J Clin*. 2012;62(4):243-274.

21. Bize R, Johnson JA, Plotnikoff RC. Physical activity level and health-related quality of life in the general adult population: a systematic review. *Prev Med*. 2007;45(6):401-415.

22. Brown DR, Carroll DD, Workman LM, Carlson SA, Brown DW. Physical activity and health-related quality of life: U.S. adults with and without limitations. *Qual Life Res*. 2014;23(10):2673-2680.

23. Penedo FJ, Dahn JR. Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Curr Opin Psychiatry*. 2005;18(2):189-193.

24. Windle G, Hughes D, Linck P, Russell I, Woods B. Is exercise effective in promoting mental well-being in older age? A systematic review. *Aging Ment Health*. 2010;14(6):652-669.

25. Steinmo S, Hagger-Johnson G, Shahab L. Bidirectional association between mental health and physical activity in older adults: Whitehall II prospective cohort study. *Prev Med*. 2014;66:74-79.

26. Smith JC, Nielson KA, Woodard JL, Seidenberg M, Rao SM. Physical activity and brain function in older adults at increased risk for Alzheimer's disease. *Brain Sci*. 2013;3(1):54-83.

27. Sofi F, Valecchi D, Bacci D, et al. Physical activity and risk of cognitive decline: a meta-analysis of prospective studies. *J Intern Med*. 2011;269(1):107-117.

28. Blazer DG, Yaffe K, Liverman CT, eds. *Cognitive Aging: Progress in Understanding and Opportunities for Action*. Washington, DC: The National Academies Press; 2015.

29. Larun L, Nordheim LV, Ekeland E, Hagen KB, Heian F. Exercise in prevention and treatment of anxiety and depression among children and young people. *Cochrane Database Syst Rev*. 2006;(3):CD004691.

30. Biddle SJ, Asare M. Physical activity and mental health in children and adolescents: a review of reviews. *Br J Sports Med*. 2011;45(11):886-895.

31. Brown HE, Pearson N, Braithwaite RE, Brown WJ, Biddle SJH. Physical activity interventions and depression in children and adolescents. *Sports Med*. 2013;43(3):195-206.

32. Rasberry CN, Lee SM, Robin L, et al. The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Prev Med*. 2011;52:S10-S20.

33. Centers for Disease Control and Prevention. *The Association Between School Based Physical Activity, Including Physical Education, and Academic Performance*. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services; 2010.

34. U.S. Department of Health and Human Services. HP2020 Objective Data Search website. Physical Activity. http://www.healthypeople.gov/2020/data-search/Search-the-Data?f%5B%5D=field_topic_area%3A3504&pop=&ci=&se=. Accessed March 20, 2015.

35. Centers for Disease Control and Prevention. Youth risk behavior surveillance — United States, 2013. *MMWR Morbid Mortal Wkly Rep*. 2014;63(suppl 4):1-168.

36. Lee IM, Buchner DM. The importance of walking to public health. *Med Sci Sports Exerc*. 2008;40(suppl 7):S512-S518.

37. Morris JN, Hardman AE. Walking to health. *Sports Med*. 1997;23(5):306-332.

38. Centers for Disease Control and Prevention. Vital signs: walking among adults — United States, 2005 and 2010. *MMWR Morbid Mortal Wkly Rep*. 2012;61(31):595-601.

39. Paul P. Analysis of data from the 2010 National Health Interview Survey. http://www.cdc.gov/nchs/nhis/about_nhis.htm. Accessed November 5, 2014.

40. Paul P, Carlson SA, Carroll DD, Berrigan D, Fulton JE. Walking for transportation and leisure among U.S. Adults — National Health Interview Survey 2010. *J Phys Act Health*. 2015;12(suppl 1):S62-S69.

41. Karsch HM, Hedlund JH, Tison J, Leaf WA. *Review of Studies on Pedestrian and Bicyclist Safety, 1991-2007*. Washington, DC: National Highway Traffic Safety Administration; 2012. Report No. DOT HS 811 614.

42. Pollack KM, Bailey MM, Gielen AC, et al. Building safety into active living initiatives. *Prev Med*. 2014;69(suppl 1):S102-S105.

43. Johns Hopkins Center for Injury Research and Policy, New York City Department of Health and Mental Hygiene, Society for Public Health Education. *Active Design Supplement: Promoting Safety*. Version 2. 2013.
44. Leyden KM. Social capital and the built environment: the importance of walkable neighborhoods. *Am J Public Health*. 2003;93(9):1546-1551.
45. Frank L, Engelke P. Multiple impacts of the built environment on public health: walkable places and the exposure to air pollution. *Int Reg Sci Rev*. 2005;28(2):193-216.
46. Federal Highway Administration. *Nonmotorized Transportation Pilot Program: Continued Progress in Developing Walking and Bicycling Networks*. Washington, DC: Federal Highway Administration, U.S. Dept of Transportation; 2014.
47. U.S. Environmental Protection Agency. *Smart Growth and Economic Success: Benefits for Real Estate Developers, Investors, Businesses and Local Governments*. Washington, DC: U.S. Environmental Protection Agency; 2012.
48. U.S. Environmental Protection Agency. *Smart Growth and Economic Success: Strategies for Local Governments*. Washington, DC: U.S. Environmental Protection Agency; 2014.
49. Smart Growth America. National Complete Streets Coalition. *Safer Streets, Stronger Economies: Complete Streets Project Outcomes from Across the Country*. Washington, DC: Smart Growth America; 2015.
50. Lee C, Ory MG, Yoon J, Forjuoh SN. Neighborhood walking among overweight and obese adults: age variations in barriers and motivators. *J Community Health*. 2013;38(1):12-22.
51. Brownson RC, Baker EA, Housemann RA, Brennan LK, Bacak SJ. Environmental and policy determinants of physical activity in the United States. *Am J Public Health*. 2001;91(12):1995-2003.
52. City of New York. Vision Zero website. <http://www.nyc.gov/VisionZero>. Accessed December 5, 2014.
53. World Health Organization. *Pedestrian Safety: A Road Safety Manual for Decision Makers and Practitioners*. Geneva, Switzerland: World Health Organization; 2013.
54. Heinonen J, Eck JE. *Pedestrian Injuries and Fatalities*. Washington, DC: Office of Community Oriented Policing Services, U.S. Dept of Justice; 2007.
55. Schwebel DC, Stavrinou D, Byington KW, Davis T, O'Neal EE, de Jong D. Distraction and pedestrian safety: how talking on the phone, texting, and listening to music impact crossing the street. *Accid Anal Prev*. 2012;45:266-271.
56. Beck LF, Greenspan AI. Why don't more children walk to school? *J Safety Res*. 2008;39(5):449-452.
57. Centers for Disease Control and Prevention. Barriers to children walking to or from school — United States, 2004. *MMWR Morbid Mortal Wkly Rep*. 2005;54(38):949-952.
58. Foster S, Knuiam M, Hooper P, Christian H, Giles-Corti B. Do changes in residents' fear of crime impact their walking? Longitudinal results from RESIDE. *Prev Med*. 2014;62:161-166.
59. Centers for Disease Control and Prevention. Neighborhood safety and the prevalence of physical inactivity — selected states, 1996. *MMWR Morbid Mortal Wkly Rep*. 1999;48(07):143-146.
60. McDonald NC. The effect of objectively measured crime on walking in minority adults. *Am J Health Promot*. 2008;22(6):433-436.
61. Gomez JE, Johnson BA, Selva M, Sallis JF. Violent crime and outdoor physical activity among inner-city youth. *Prev Med*. 2004;39(5):876-881.
62. Ewing R, Cervero R. Travel and the built environment: a meta-analysis. *J Am Plann Assoc*. 2010;76(3):265-294.
63. McCormack GR, Shiell A. In search of causality: a systematic review of the relationship between the built environment and physical activity among adults. *Int J Behav Nutr Phys Act*. 2011;8:125.
64. Saelens BE, Handy SL. Built environment correlates of walking: a review. *Med Sci Sports Exerc*. 2008;40(suppl 7):S550-S566.
65. Bauman AE, Bull FC. *Environmental Correlates of Physical Activity and Walking in Adults and Children: A Review of Reviews*. London, England: National Institute of Health and Clinical Excellence; 2007.
66. Lachapelle U, Frank L, Saelens BE, Sallis JF, Conway TL. Commuting by public transit and physical activity: where you live, where you work, and how you get there. *J Phys Act Health*. 2011;8(suppl 1):S72-S82.
67. Lachapelle U, Frank LD. Transit and health: mode of transport, employer-sponsored public transit pass programs, and physical activity. *J Public Health Policy*. 2009;30(suppl 1):S73-S94.
68. Wener RE, Evans GW. A morning stroll: levels of physical activity in car and mass transit commuting. *Environ Behav*. 2007;39(1):62-74.
69. Brown BB, Werner CM. A new rail stop: tracking moderate physical activity bouts and ridership. *Am J Prev Med*. 2007;33(4):306-309.
70. Hoehner CM, Brennan Ramirez LK, Elliott MB, Handy SL, Brownson RC. Perceived and objective environmental measures and physical activity among urban adults. *Am J Prev Med*. 2005;28(suppl 2):105-116.
71. Besser LM, Dannenberg AL. Walking to public transit: steps to help meet physical activity recommendations. *Am J Prev Med*. 2005;29(4):273-280.
72. Freeland AL, Banerjee SN, Dannenberg AL, Wendel AM. Walking associated with public transit: moving toward increased physical activity in the United States. *Am J Public Health*. 2013;103(3):536-542.

73. Greenberg M, Renne J, Lane R, Zupan J. Physical activity and use of suburban train stations: an exploratory analysis. *Journal of Public Transportation*. 2005;8(3):89-116.
74. Centers for Disease Control and Prevention. Vital signs: disability and physical activity — United States, 2009-2012. *MMWR Morbid Mortal Wkly Rep*. 2014;63(18):407-413.
75. Centers for Disease Control and Prevention. Physical Activity and Arthritis Overview website. http://www.cdc.gov/arthritis/pa_overview.htm. Accessed January 15, 2015.
76. Community Preventive Services Task Force. The Guide to Community Preventive Services website. Increasing Physical Activity: Environmental and Policy Approaches. <http://www.thecommunityguide.org/pa/environmental-policy/index.html>. Accessed November 5, 2014.
77. Heath GW, Brownson RC, Kruger J, et al. The effectiveness of urban design and land use and transport policies and practices to increase physical activity: a systematic review. *J Phys Act Health*. 2006;3(suppl 1):S55-S76.
78. National Institute for Health and Clinical Excellence. *Physical Activity and the Environment. NICE Public Health Guidance* 8. London, England: National Institute of Health and Clinical Excellence; 2015.
79. Transportation Research Board. *Does the Built Environment Influence Physical Activity? Examining the Evidence*. Washington, DC: Transportation Research Board, Institute of Medicine of the National Academies; 2005.
80. Centers for Disease Control and Prevention. Increasing physical activity. A report on recommendations of the Task Force on Community Preventive Services. *MMWR Recomm Rep*. 2001;50(RR-18):1-14.
81. Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity. A systematic review. *Am J Prev Med*. 2002;22(suppl 4):73-107.
82. Centers for Disease Control and Prevention. *Promoting Physical Activity. A Guide for Community Action*. 2nd ed. Champaign, IL: Human Kinetics; 2009.
83. Hillsdon M, Foster C, Thorogood M. Interventions for promoting physical activity. *Cochrane Database Syst Rev*. 2005; (1):CD003180.
84. Task Force on Community Preventive Services. *The Guide to Community Preventive Services: What Works to Promote Health*. New York, NY: Oxford University Press; 2005.
85. New York City Department of City Planning, New York City Department of Design and Construction, New York City Department of Health and Mental Hygiene, New York City Department of Transportation. *Active Design: Shaping the Sidewalk Experience*. New York, NY: City of New York; 2013.
86. Ho C-H, Payne L, Orsega-Smith E, Godbey G. Parks, recreation, and public health. *Parks & Recreation*. 2003;38:18-27.
87. Kaczynski A, Henderson K. Environmental correlates of physical activity: a review of evidence about parks and recreation. *Leisure Sci*. 2007;29(4):315-354.
88. National Recreation and Park Association. *Safe Routes to Parks: Improving Access to Parks Through Walkability*. Ashburn, VA: National Recreation and Park Association; 2015.
89. Institute of Medicine. *Educating the Student Body: Taking Physical Activity and Physical Education to School*. Washington, DC: The National Academies Press; 2013.
90. Physical Activity Guidelines for Americans Midcourse Report Subcommittee of the President's Council on Fitness Sports & Nutrition. *Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth*. Washington, DC: U.S. Dept of Health and Human Services; 2012.
91. Choy LB, McGurk MD, Tamashiro R, Nett B, Maddock JE. Increasing access to places for physical activity through a joint use agreement: a case study in urban Honolulu. *Prev Chronic Dis*. 2008;5(3):1-8.
92. Durant N, Harris SK, Doyle S, et al. Relation of school environment and policy to adolescent physical activity. *J Sch Health*. 2009;79(4):153-159.
93. Lafleur M, Gonzalez E, Schwarte L, et al. Increasing physical activity in under-resourced communities through school-based, joint-use agreements, Los Angeles County, 2010-2012. *Prev Chronic Dis*. 2013;10:e89.
94. Farley TA, Meriwether RA, Baker ET, Watkins LT, Johnson CC, Webber LS. Safe play spaces to promote physical activity in inner-city children: results from a pilot study of an environmental intervention. *Am J Public Health*. 2007;97(9):1625-1631.
95. Bopp M, Kaczynski A, Wittman P. Active commuting patterns at a large, midwestern college campus. *J Am Coll Health*. 2011;59(7):605-611.
96. Dodson EA, Lovegreen SL, Elliott MB, Haire-Joshu D, Brownson RC. Worksite policies and environments supporting physical activity in Midwestern communities. *Am J Health Promot*. 2008;23(1):51-55.
97. 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? *Am J Health Promot*. 2005;19(3):167-193.
98. National Coalition for Promoting Physical Activity. CEO Pledge website. Workplace Wellness Strategies. <http://www.ncppa.org/ceo-pledge%E2%84%A0-0>. Accessed January 09, 2015.
99. American Council on Exercise. FIT Facts website. Fostering a Workplace Culture of Physical Activity. <http://www.acefitness.org/acefit/fitness-fact-article/3120/fostering-a-workplace-culture-of/>. Accessed January 9, 2015.
100. Centers for Disease Control and Prevention. *Steps to Wellness: A Guide to Implementing the 2008 Physical Activity*

Guidelines for Americans in the Workplace. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services; 2012.

101. Lin JS, O'Connor EA, Evans CV, Senger CA, Rowland MG, Groom HC. *Behavioral Counseling to Promote a Healthy Lifestyle for Cardiovascular Disease Prevention in Persons with Cardiovascular Risk Factors: An Evidence Update for the U.S. Preventive Services Task Force. Evidence Synthesis No. 113.* Rockville, MD: Agency for Healthcare Research and Quality; 2014. AHRQ Publication No. 13-05179-EF-1.

102. U.S. Preventive Services Task Force. Published Recommendations website. Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults with Cardiovascular Risk Factors: Behavioral Counseling. August 2014. <http://www.uspreventiveservicestaskforce.org/Page/Topic/recommendation-summary/healthy-diet-and-physical-activity-counseling-adults-with-high-risk-of-cvd>. Accessed November 5, 2014.

103. McAfee T, Davis KC, Alexander RL, Jr., Pechacek TF, Bunnell R. Effect of the first federally funded US antismoking national media campaign. *Lancet.* 2013;382(9909):2003-2011.

104. Wakefield MA, Loken B, Hornik RC. Use of mass media campaigns to change health behaviour. *Lancet.* 2010;376(9748):1261-1271.

105. Bala MM, Strzeszynski L, Topor-Madry R, Cahill K. Mass media interventions for smoking cessation in adults. *Cochrane Database Syst Rev.* 2013;(6).CD004704.pub3.

106. Maher CA, Lewis LK, Ferrar K, Marshall S, De Bourdeaudhuij I, Vandelandotte C. Are health behavior change interventions that use online social networks effective? A systematic review. *J Med Internet Res.* 2014;16(2):e40.

107. Brown DR, Soares J, Epping JM, et al. Stand-alone mass media campaigns to increase physical activity: a Community Guide updated review. *Am J Prev Med.* 2012;43(5):551-561.

108. U.S. Department of Transportation Federal Highway Administration. National Household Travel Survey website. Online Analysis Tools. <http://nhts.ornl.gov/tools.shtml>. Accessed December 5, 2014.

109. Watson KB, Frederick GM, Harris CD, Carlson SA, Fulton JE. U.S. adults' participation in specific activities, Behavioral Risk Factor Surveillance System—2011. *J Phys Act Health.* 2015;12(suppl 1):S3-S10.

110. McDonald NC. Active transportation to school: trends among U.S. schoolchildren, 1969-2001. *Am J Prev Med.* 2007;32(6):509-516.

111. McDonald NC, Brown AL, Marchetti LM, Pedroso MS. U.S. school travel, 2009 an assessment of trends. *Am J Prev Med.* 2011;41(2):146-151.

112. Centers for Disease Control and Prevention. Framework for program evaluation in public health. *MMWR Recomm Rep.* 1999;48(RR-11):1-40.

113. Davis JC, Verhagen E, Bryan S, et al. 2014 Consensus statement from the first Economics of Physical Inactivity Consensus (EPIC) Conference (Vancouver). *Br J Sports Med.* 2014;48(12):947-951.

114. Laine J, Kuvaja-Kollner V, Pietila E, Koivuneva M, Valtonen H, Kankaanpaa E. Cost-effectiveness of population-level physical activity interventions: a systematic review. *Am J Health Promot.* 2014;29(2):71-80.

115. Wu S, Cohen D, Shi Y, Pearson M, Sturm R. Economic analysis of physical activity interventions. *Am J Prev Med.* 2011;40(2):149-158.

116. Snyder R. *The Economic Value of Active Transportation.* Los Angeles, CA: Ryan Snyder Associates, LLC.; 2004.

117. Campbell R, Wittgens M. *The Business Case for Active Transportation. The Economic Benefits of Walking and Cycling.* Gloucester, Ontario: Health Canada; 2004.

118. Gotschi T, Mills K. *Active Transportation for America: The Case for Increased Federal Investment in Bicycling and Walking.* Washington, DC: Rails to Trails Conservancy; 2008.

119. National Physical Activity Plan. <http://www.physicalactivityplan.org/NationalPhysicalActivityPlan.pdf>. Accessed March 20, 2015.

Yes No

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