

Issue Brief

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Walk to a Healthy Future

Introduction

Walking is one of the most effective, enjoyable, and accessible forms of exercise known. Noncompetitive and antigavity, it promotes physical fitness and good health. Walking helps build endurance, enhance muscle tone, increase joint flexibility, and strengthen bones. Regular walking contributes to weight loss, which in turn helps prevent or control heart disease, hypertension, diabetes, and other diseases.

From earliest recorded history, people have lauded the positive effects of walking, and the pedometer, a device used to accurately measure every step an individual takes, has long been recognized as an effective tool for tracking progress and maintaining motivation. Leonardo da Vinci may have designed the prototype when he created a gear-driving device with a pendulum arm to move back and forth with every swing of the leg. Three centuries later, Thomas Jefferson purchased the latest version in France and brought it back to America. Pedometers appeared in the commercial market in Japan in 1965 under the name Manpo-meter (*manpo* in Japanese means 10,000 steps), and they have enjoyed great popularity ever since.

It has been well publicized that, since the mid-1980s, the average American has gained one to three pounds per year. According to recent survey data from the Centers for Disease Control and Prevention (CDC), almost two-thirds of adults and 15 percent of children were overweight or obese in 2000. Inasmuch as we are in the midst of a longevity revolution that will more than double the number of older persons in the next 50 years, we are looking at a significant number of at-risk older people.

The importance of living more healthfully as we live longer is abundantly clear. Indeed, if we could make major headway in promoting regular exercise, more people would enjoy greater health and quality of life in their later years.

Walk to a Healthy Future

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The Problem of Overweight and Obese Americans

The growing problem of overweight and obese people affects all segments of the U.S. population, young and old. The CDC estimates that more than 120 million Americans, or about 64 percent of the adult population, are overweight. Almost 60 million—nearly one-third—are obese. This trend has been increasing over the last two decades; the percent of overweight children tripled between 1980 and 2000, with children as young as 10 years old developing Type II or “old age” diabetes. Particularly troubling is the likelihood that many of the habits these children have established will carry over into their adult lives.

Overweight is defined in adults as a body mass index (BMI) between 25 and 29.9 kilograms per meter squared. Obesity is defined for adults as a body mass index above 30 kilograms per meter squared, kg/m². For example, an adult who is 6 feet tall and weighs 250 pounds would have a BMI of 34. A table with which an individual can calculate his or her BMI is available at www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm.

The effects of overweight and obese Americans have a significant impact on the health of our nation. Being overweight, and especially obese, contributes to cardiovascular disease, diabetes, hypertension, sleep apnea, and arthritis, as well

as disabilities that relate to bearing excessive weight. Approximately 300,000 annual deaths are attributed to obesity. The incidence of weight-related preventable illnesses among the over-30 population has increased, elevating health care costs and reducing workplace productivity. It has been estimated that obesity accounts for nearly 10 percent of U.S. health care expenditures. In 2001, obesity cost Americans \$123 billion, including direct health care costs for diseases related to obesity and indirect costs such as loss of productivity. These costs are estimated to rise to \$160 billion by 2010.

Lack of exercise is a prime reason for weight gain. At least 60 percent of American adults do not exercise at the government-recommended level of 30 minutes each day. In fact, 29 percent of American adults do not exercise at all. This despite the fact that physical activity is one of the 10 Leading Health Indicators identified by the Department of Health and Human Services' *Healthy People 2010* reports. It is clear that our nation needs to increase its level of physical activity.

Walking to a Healthy Future

Walking is an easy and effective exercise that requires no training or equipment, and substantial health benefits accrue with even 30 minutes of moderate walking. The Mayo Clinic reports that walking for 30 to 60 minutes each day can help people attain the fitness level associated with a longer, healthier life. In a study of Harvard graduates, Mayo Clinic researchers discovered that men who burned 2,000 or more calories a week by walking lived an average of one to two years longer than those who burned fewer than 500 calories a week by exercising.

Japanese physician Yoshiro Hatano found that most people take between 3,000 and 5,000 steps a day. Studies in both Japan and the United States indicate that the average person should take at least 10,000 steps per day, which is about five miles, depending upon one's stride. This is the equivalent of a strenuous 30-minute workout and can burn between 300 and 500 calories a day, or between 2,100 and 3,500 calories a week (depending upon speed and intensity).

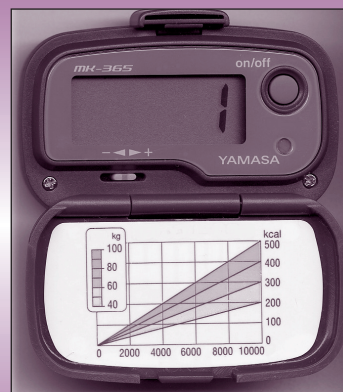
Common physical and cognitive declines associated with aging, exacerbated by obesity and poor health, can be prevented by simple changes in daily routine. Walking 10,000 steps is a reasonable goal to control weight and maintain aerobic fitness, and it will also help build bone and muscle strength. Assuming consistent food intake, the walker will maintain or lose weight by walking about 10,000 steps, as the energy consumed through food intake is expended through walking. Furthermore, a routine of walking will decrease cardiovascular disease and hypertension, enhance cognition, and improve sleep. Exercise has been shown to be as effective as selective serotonin receptor inhibitors (i.e., prescription antidepressants) in treating depression, and as effective as metformin (i.e., a drug used to control blood sugar levels) in treating diabetes. Exercise also lowers blood cholesterol levels, reducing or eliminating entirely the need for cholesterol-lowering statins.

Some people use a treadmill to take 10,000 steps a day. Others take advantage of natural opportunities to increase their walking by taking the stairs instead of the escalator or by parking far away from store entrances—or by walking to the store to begin with! Groups of friends and acquaintances form informal walking groups, and a number of walking clubs have been organized throughout the country. Some sponsor regional year-round, noncompetitive walks for a nominal fee.

The Benefits of Pedometers

Experts in the field of behavioral and social sciences have established the importance of autonomy and self-regulation in maintaining a physically active regimen. Walkers can effectively monitor their output by using a pedometer, which clips unobtrusively onto a belt or waistband and counts every step they take, providing instant feedback on their daily level of activity. For a small investment (step counters typically cost between \$10 and \$30), its usefulness is substantial: It is a tracking device continuously collecting current activity, a feedback tool providing immediate information on activity level, and a behavioral cue motivating its owner to be active.

Given simple instructions, few adults have problems recording their total daily steps on a calendar and resetting the pedometer to zero in preparation for the next day. Researchers have noted that people have difficulty sticking with other means of measuring and motivating physical activity. Self-report diaries or logs are limited because of difficulty of recall and subjective interpretations of terms used such as “moderate” and “vigorous” activity. Pedometers take the guesswork out of measuring a workout, and “steps per day” has become universally adopted as a standard unit of measurement.



This is an example of a pedometer, the ILC Step Counter. It is recommended by *Good Housekeeping* and was featured in its June 2003 issue. More information

is available at www.ilcusa.org/shop/estore.htm.

Few studies have been conducted involving head-to-head comparisons of different brands. The most accurate brand in one study, a product of the Japanese company the Yamax Corporation (Model SW-500, Tokyo), recorded within 1 percent of all steps taken under controlled conditions (walking on a 4.88 km sidewalk course). This particular model has been discontinued; however, the company produces other models of varying complexity that adhere to the same level of quality. Devices with added features that estimate energy expended and/or distance traveled are also available.

Steps That Should Be Taken

The use of pedometers should be encouraged in public and private initiatives at all levels. For example, America on the Move™ (AOTM) is a nationwide campaign designed to promote healthy eating and active living in order to stop weight gain in America and reduce the many health complications that result from being overweight. AOTM is an initiative of the nonprofit organization the Partnership to Promote Healthy Eating and Active Living. AOTM is based on scientific research and is designed to provide education, support, and tools to Americans of all ages to encourage them to take just 2,000 extra steps each day (the equivalent of about one mile), or eat 100 fewer calories in order to create a balance between energy expenditure and consumption. This campaign, begun in Colorado as Colorado on the Move™, uses the pedometer as a key tool for attracting and maintaining interest in walking. The federal government's USA on the Move initiative encouraging older people to walk also advocates the use of step counters. Even informal walking clubs should consider using them.

A wealth of literature has been written in Japanese about pedometer-assessed physical activity, which is a potential source of important scientific and practical information. To date, these papers have not been translated; thus contents are inaccessible to most North American researchers and practitioners. Support for the translation and review of Japanese-language literature would greatly contribute to our understanding and use of the pedometer.

In addition, further research involving pedometers needs to be undertaken, including additional investigations of the relationship between steps per day and health benefits and the development of program theories for different populations to obtain maximum benefit from the device.

Afterword

According to Thomas Jefferson, who purportedly walked four miles a day, the purpose of walking “is to relax the mind.” He writes: “You should therefore not permit yourself to even think while you walk but divert yourself by the objects surrounding you. Walking is the best possible exercise. Habituate yourself to walk very far. The Europeans value themselves on having subdued the horse to the uses of man; but I doubt whether we have not lost more than we have gained, by the use of this animal. . . . There is no habit you will value so much as that of walking without fatigue.”

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The International Longevity Center–USA (ILC–USA) is a not-for-profit, nonpartisan research, education, and policy organization whose mission is to help individuals and societies address longevity and population aging in positive and productive ways, and highlight older people’s productivity and contributions to their families and society as a whole.

The organization is part of a multinational research and education consortium, which includes centers in the United States, Japan, Great Britain, France, and the Dominican Republic. These centers work both autonomously and collaboratively to study how greater life expectancy and increased proportions of older people impact nations around the world.

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