

Increasing the amount of walking may help prevent cardiovascular disease

Chodzenie jako forma prewencji chorób układu sercowo-naczyniowego

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INTRODUCTION

Recent research has demonstrated the role of physical activity in the prevention and treatment of non-communicable diseases including cardiovascular disease, metabolic diseases and cancer. The UN has agreed that the prevention of non-communicable disease is greatly beneficial to the overall economy. Of the 57 million people who died in 2008, the main causes of 36 million of the deaths were non-communicable diseases. Since these diseases tend to affect people in the prime of their working lives, the World Economic Forum predicts that their total cost will reach \$47 trillion by 2030 [1]. Recent studies show the relationship between physical activity and reduced total mortality and mortality due to cardiovascular disease [2–6]. A minimum of 30 minutes of at least moderate-intensity activities for three to five, and even seven, times per week is highly recommended (but not less than 150 minutes per week) [7].

In this context, we feel that “Kardiologia Polska” does not stress enough the role of physical activity in preventing cardiovascular disease, currently the main cause of deaths in Poland, especially given that despite the growing public awareness of the beneficial effects of exercise, only a few people remain physically active. It is estimated that about 60% of the global population does not do the minimum amount of physical activity; one quarter of adult Americans do not engage in any physical activity during their leisure time [8, 9]. Therefore, in addition to physical activity performed during leisure time, the most important opportunities to gain physical activity are in the workplace, during the commute to the workplace, and in activities at home.

WALKING AND HEALTH BENEFITS

Walking is one of the most accessible and easiest forms of physical activity for a large range of ages, and does not require

any special skills or financial outlay. Walking may be suggested to obese and elderly people, who are usually not eager to take more vigorous forms of activity, and people leading a sedentary lifestyle. Walking is also important for those patients unable to complete intense physical activity due to negative feedback from raised heart rate or blood pressure.

Most of the health benefits observed from regular physical activity can be achieved by walking, and it reduces the risk of cardiovascular disease. Increasing the duration, distance, and even the style, of walking further increases the protection against these diseases [9–12]. A study conducted with a Japanese population has shown that regular walking improves the lipid profile by reducing triglycerides and increasing HDL [13]. Another significant benefit to the cardiovascular system is the reduction in body mass index, systolic and diastolic blood pressure and waist circumference as a result of taking a specified number of steps each day [8, 14]. Regular physical activity at a medium intensity helps control blood glucose levels, thus aiding the prevention of metabolic diseases, including type II diabetes [15]. It has been shown that walking more than one mile per day (> 1.6 km) reduces the overall risk of death two-fold, and the risk of death from coronary heart disease and cardiovascular events in diabetics five-fold [16].

The benefits of physical activity are generally well known to the public; however, public awareness of the dangers associated with a lack of physical activity remains at a very low level. A study evaluating the effect of reducing physical activity by decreasing the daily number of steps to 1,500 showed a 7% increase in visceral fat mass within the two week timeline. Additionally, as a result of a reduction in pedestrian activity, a decrease in insulin sensitivity and weakness in postprandial lipid metabolism were also observed [17]. An increase in visceral fat mass may lead to diseases directly resulting from a lack of physical activity, which include cardiovascular disease [18].

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THE Pedometer: A CONTROL AND A MOTIVATORY TOOL

Walking as a method for maintaining overall health is well known and recommended by medical personnel, but a complete assessment that establishes the amount of walking needed to produce significance is the ideal action in understanding how to improve physical activity. A pedometer seems to be the best tool for providing a tangible measure of the physical activity involved in daily living's various activities [2]. The daily number of steps recommended for adults to maintain good health is 10,000. On the basis of the recommended daily number of steps, preliminary pedometer-determined physical activity cut-points for healthy adults have been established as the following: basal activity — less than 2,500 steps/day, sedentary — less than 5,000 steps/day, low active — from 5,000 to 7,499 steps/day, somewhat active — from 7,500 to 9,999 steps/day, active — more than 10,000 steps/day, and very active — more than 12,000 steps/day. People walking \geq 12,500 steps a day present the lowest risk of adverse cardiac events [19]. However, studies show that the daily number of steps performed by adults is usually less than the recommended number of 10,000; this particularly applies to the elderly [20]. 10,000 steps is the reference point since it refers to the average total number of steps taken by adults during the day. This amount of daily walking would also include the recommended 30 minutes a day of exercise at moderate intensity. It is assumed that the rate at medium intensity is about 100 steps per minute; therefore, in 30 minutes of such exercise a person should perform circa 3,000 steps. In summing up the above value with the number of steps taken in executing the activities of daily living, the recommended daily number of steps is achieved, depending on the lifestyle featured [21].

The measurement recorded by the pedometer serves to increase self-awareness of the level of physical activity attained each day. The data, in the form of the number of previous steps, is excellent feedback that may motivate not only those wishing to increase physical activity, but also patients in the middle of the rehabilitation process. It has been shown that those who wore a pedometer increased their daily physical activity by an average of 2,000 steps a day. The implementation of pedometers among the elderly improved walking activity by on average 225 minutes/week. This presents positive significance, given the general decline in physical activity among elderly men and women [22]. Patients who have encountered an acute coronary incident, and who were equipped with a pedometer, presented a greater amount of physical activity than those covered by only standard medical care [23].

We conclude that when precisely assessed, walking should be widely recommended to patients. The pedometer is an inexpensive, small and easy-to-use tool not only for assessing physical activity, but also for encouraging higher volumes of measured activity. The device is worn at the hip and is

almost invisible, and measurements can easily be compared within individuals and other patients.

Conflict of interest: none declared

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