

# Mayo Clinic Proceedings

## Exercise: A Walk in the Park?

In this issue of *Mayo Clinic Proceedings*,<sup>1</sup> Nemoto et al address the benefits of walking regimens and in so doing reflect a broad movement in the exercise literature and the health intervention community. Emphasis is moving away from in-termittent sweat-drenched bouts of arduous exercise to more frequent walking, whether in the park, at work, or at home.

Over the past 50 years, the core messages of publications in exercise physiology have evolved similarly to those of other societal movements. Two generations ago, the notion that people would pay thousands of dollars or Euros each year to sweat and feel the pain of extreme physical exertion would have been viewed as untenable. However, the exercise movement emerged, and scientists and celebrities ran hand in hand to the gymnasium. During this time, the message conveyed by exercise literature was “more is better.” The oft-quoted surgeon general’s report<sup>2</sup> well summarizes the notion that more exercise of greater intensity promises more health of greater duration. The heated debates as to whether aerobic exercise has more health benefits than strength training<sup>3</sup> have quieted with the growing recognition that all exercise is good, and more of it is better.<sup>4</sup>

It is interesting that the exercise movement evolved similarly to other emotional societal movements such as those addressing racial intolerance<sup>5,6</sup> and homosexual discrimination.<sup>7</sup> In those movements too, initial vehement cries for action and debate among the scientific, intellectual, and political communities as to how best to proceed gave way to consensus and action.<sup>8</sup>

Nemoto et al report that walking training in middle-aged and older people bestows health benefits that are akin to those provided by a gymnasium exercise program. This article is 1 of many that speak to the health benefits associated with walking, whether the outcome measurement is blood pressure,<sup>9</sup> as in this article, diabetes,<sup>10</sup> other metabolic disorders,<sup>11</sup> cardiovascular disease,<sup>12</sup> joint problems, or mental health (Figure 1).<sup>13</sup> Collectively, these data suggest that, regardless of the study population, walking improves health. This information complements physiological studies that document the role played by inactivity or sedentariness in poor health<sup>14</sup> and in the pathogenesis of obesity.<sup>15-17</sup> The growing body of scientific information regarding the health benefits of walking<sup>18</sup> and of reversing sedentariness is mirrored by a growing public interest in walking as a means of exercise and health.

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What is one to make of the mounting evidence of the health benefits of walking in light of data from the exercise movement showing the benefits of high-intensity, high-level exertion? This apparent quandary can be resolved. First, individuals who are able to undertake and sustain high-duration, high-intensity exercise are, by definition, healthier than the population who rarely exercises; long-distance cyclists are inevitably healthier than people who only occasionally walk in the park. Second, emerging evidence indicates that a great deal of low-intensity activity can have as many health and physiological benefits as high-intensity exercise.<sup>19</sup> For example, if an office worker with elevated plasma triglycerides (eg, familial hypertriglyceridemia) goes to the gym and runs for 30 minutes at 5 mph, his or her triglyceride levels will decrease to normal values for the duration of the exercise and for approximately 1½ hours afterward.<sup>20,21</sup> Conversely, if the same office worker walks for 30 minutes of each hour throughout the workday, his or her triglyceride levels will also decrease during and after each walk, although not to the same degree as during a 5 mph run. However, because the

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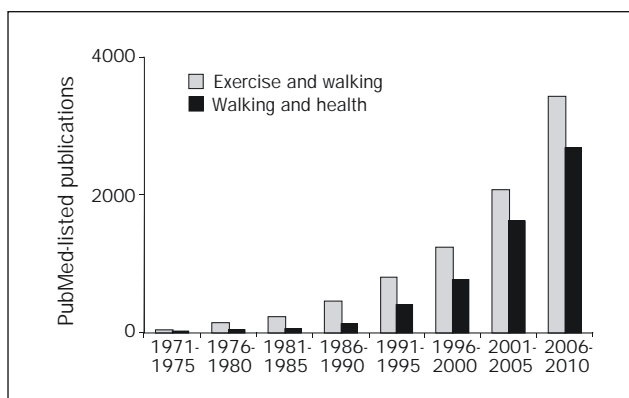


FIGURE 1. PubMed citations for *exercise and walking* and *walking and health*. Data are projected for 2010 based on 2006 data. PubMed search engine available at [www.ncbi.nlm.nih.gov/entrez/query.fcgi](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi).

walking occurs throughout the day, the *cumulative* daylong decrease in blood triglycerides is greater than that seen after a single bout of running.<sup>22</sup> Third, walking is accessible to many more people than high-intensity exercise both in tolerance and cost. Fourth and importantly, walking exposes participants to few activity-associated injuries,<sup>23</sup> whereas nearly all high-intensity athletes experience sports-associated injuries.<sup>24</sup> Overall, the critical health benefit may be derived from the displacement of sedentariness by activity.<sup>25</sup> The longer a person is active, the better, regardless of what form that activity takes.

In conclusion, humans evolved to walk upright over the past million years.<sup>26</sup> Over the past 200,000 years, people populated the earth by walking across it. Our bodies evolved to walk.<sup>27</sup> As recent as 150 years ago, 90% of the world's population lived in agricultural regions,<sup>28</sup> and, like our distant ancestors, walked to work, physically exerted themselves at work, and walked home at the end of the day. Water carriage, food preparation, and clothes washing were intensively manual,<sup>29</sup> and walking was required for socialization.<sup>30</sup> In the short span of 150 years, we have forsaken our legs as a means of locomotion, work, and leisure. We are designed to walk all day long, and Nemoto's article suggests that we should.

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