

Health benefits of Scottish Country Dancing

Introduction

The World Health Organization published the *Global action plan on physical activity 2018–2030: more active people for a healthier world*¹ in June 2018, to guide and support countries scale up policy actions to promote physical activity. The overall target for this initiative is: “A 15% relative reduction in the global prevalence of physical inactivity in adults and in adolescents by 2030.”

A key strategy towards the WHO target is encouragement of recreational physical activity, which the WHO defines as “Activity performed by an individual that is not required as an essential activity of daily living and is performed at the discretion of the individual. Such activities include sports participation, exercise conditioning or training, such as going for a walk, dancing and gardening.” Below is a summary of the health benefits of Scottish country dancing and exercise in general.

Scottish Country Dancing

Scottish country dancing is a form of physical activity which can be enjoyed by all age groups. The benefits of dancing extend beyond the physical to include the maintenance of cognitive function and the social value of involvement in a community of dancers. The physical benefits of Scottish country dancing in particular have been demonstrated for older women by a research team from Strathclyde University in Glasgow, Scotland.² A summary of these researchers’ findings is cited below:

“The effects of long-term participation in Scottish country dance on body composition, functional ability, and balance in healthy older females were examined. Participants were grouped into dancers and physically active nondancers (ages 60–70 and 70–80 for both groups). Physical activity, body composition (body-mass index, skinfold thickness, waist-to-hip ratio), functional ability (6-min walk distance, 6-m walk time, 8-ft up-and-go time, lower body flexibility, shoulder flexibility), and static balance were measured. Younger dancers and physically active nondancers had similar 6-min walk distance, 6-m walk time, and 8-ft up-and-go time results; however, while older dancers performed similarly to younger dancers, older physically active nondancers performed poorer than their younger counterparts ($p < 0.05$). Body composition and static balance were the same for all groups. Regular physical activity can maintain body composition and postural stability with advancing age; however, Scottish country dance can delay the effects of aging on locomotion-related functional abilities.”

Dance as physical activity

There is evidence of the benefits of dance in general published in scientific literature. In particular, evidence has accumulated on the physical benefits of various forms of dance for an older population.³ Intervention studies have found that after 8–12 weeks participation in dance, there are increases in aerobic power, muscle endurance, muscle strength, and flexibility. Specific to functional ability, improved walking, change of direction, timed up-and-go, and stair climb speed have been reported, along with favourable improvements in both static and dynamic balance.

Of note, the benefits are not restricted to the older population. Publications attest to the value in children and young people.⁴ A systematic review of 14 controlled studies of recreational dance activity involving young people aged 5–21 years suggested that recreational dance can improve cardiovascular fitness and bone health of children and young people and can contribute to preventing or reducing obesity.

Moreover, the psychological benefits of dance have also been described from a detailed review of published literature.⁵ This review looked at evidence for the effects of dancing and Dance Movement Therapy from 23 studies. Many different types of dance, ranging from ballroom to folk dance were included. It also studied different groups of people, and aspects of psychological wellbeing. Overall, the review findings suggested that dancing has a positive effect on our quality of life, body image and mood. It also found that dance could reduce both anxiety and depression.

Recent epidemiological evidence has shown that physical activity may significantly decrease age-related risks for Alzheimer's disease and other forms of dementia.⁶ The most insightful publication in this regard appeared in the *New England Journal of Medicine* in 2003.⁷ Among leisure activities, reading, playing board games, playing musical instruments, and dance were associated with a reduced risk of dementia. Interestingly dancing was the only physical activity associated with a reduced risk of dementia.

Health benefits of physical activity in general

Convincing scientific evidence, published in peer-reviewed journals has demonstrated that physical inactivity is a modifiable risk factor for cardiovascular disease and, over time, for an ever-increasing number of other chronic diseases, such as diabetes mellitus, colon cancer, breast cancer, obesity, hypertension, osteoporosis and osteoarthritis and depression.^{8,9,10,11} Of particular note, investigation has revealed reductions in the risk of death from any cause and from cardiovascular disease. For example, for both healthy men and women, being fit or active was shown to be associated with a 20 to 35% reduction in risk of death.^{12,13}

Additional research has shown that being unfit warrants consideration as a risk factor, distinct from being inactive.¹⁴ Physical fitness refers to a physiologic state of well-being that allows one to meet the demands of daily living or that provides the basis for participation in sport. Physical fitness is similar to physical activity in its relation to morbidity and mortality⁹ but is more strongly predictive of health outcomes than physical activity.¹¹

The benefits of physical activity also appear to be graded,^{15,16} such that even small improvements in physical activity are associated with a significant reduction in risk. So how much physical activity is enough? Most health and fitness organizations and professionals advocate a minimum volume of exercise that expends 1000 kcal per week. For example, cycling at 15 mph for 90-120 minutes will burn about 1000 calories. That could be a tall order for many people. Recently, investigators have postulated that even lower levels of weekly energy expenditure may be associated with health benefits.^{17,18,19} Actually, an amount of exercise that is about half of what is currently recommended may be sufficient, particularly for people who are extremely deconditioned or are frail and elderly.¹¹

All of these facts; the demonstrated value of fitness; of even moderate physical activity; and of improved musculoskeletal fitness, are of relevance to Scottish country dancing, which need not always involve very strenuous activity. Such an activity is also ideally suited to the elderly.

References:

1. Global action plan on physical activity 2018–2030: more active people for a healthier world (available at <https://www.who.int/ncds/prevention/physical-activity/global-action-plan-2018-2030/en/>)
2. Susan Dewhurst, Norah Nelson, Paul K. Dougall, and Theodoros M. Bampouras. Scottish Country Dance Benefits to Functional Ability in Older Women. *Journal of Aging and Physical Activity*, 2014, 22, 146-153.
3. Keogh, J.W.L., Kilding, A., Pidgeon, P., Ashley, L., & Gillis, D. (2012). Effects of different weekly frequencies of dance on older adults' functional performance and physical activity patterns. *European Journal of Sports and Exercise Science*, 1(1), 14–23.
4. Burkhardt, J., & Brennan, C. (2012). The effects of recreational dance interventions on the health and well-being of children and young people: A systematic review. *Arts & Health: An International Journal for Research, Policy and Practice*, doi: 10.1080/17533015.2012.665810.
5. Koch S, Kunz T, Lykou S, Cruz R. Effects of dance movement therapy and dance on health-related psychological outcomes: A meta-analysis. *The Arts in Psychotherapy*, 2014, Volume 41, Issue 1, 46-64.

6. Piotr Gronek, Stefan Balko, Joanna Gronek, Adam Zajac, Adam Maszczyk, Roman Celka, Agnieszka Doberska, Wojciech Czarny, Robert Podstawski, Cain C. T. Clark, Fang Yu: Physical Activity and Alzheimer's Disease: A Narrative Review. *Ageing and Disease*. Volume 10, Number 6, December 2019
7. Verghese J, Lipton RB, Katz MJ, Hall CB, Derby CA, Kuslansky G, Ambrose AF, Sliwinski M, Buschke H. Leisure activities and the risk of dementia in the elderly. *N Engl J Med*. 2003;348(25):2508–16.
8. Bouchard C, Shephard RJ. Physical activity fitness and health: the model and key concepts. In: Bouchard C, Shephard RJ, Stephens T, editors. *Physical activity fitness and health: International proceedings and consensus statement*. Champaign (IL): Human Kinetics; 1994. p. 77-88.
9. Blair SN, Brodney S. Effects of physical inactivity and obesity on morbidity and mortality: current evidence and research issues. *Med Sci Sports Exerc* 1999;31:S646-62.
10. Taylor RS, Brown A, Ebrahim S, et al. Exercise-based rehabilitation for patients with coronary heart disease: systematic review and meta-analysis of randomized controlled trials. *Am J Med* 2004;116:682-92.
11. Blair SN, Cheng Y, Holder JS. Is physical activity or physical fitness more important in defining health benefits? [discussion S419-20]. *Med Sci Sports Exerc* 2001;33:S379-99.
12. Macera CA, Hootman JM, Sniezek JE. Major public health benefits of physical activity. *Arthritis Rheum* 2003;49:122-8.
13. Macera CA, Powell KE. Population attributable risk: implications of physical activity dose. [discussion 640-1]. *Med Sci Sports Exerc* 2001;33:S635-9.
14. Paul T. Williams. Physical fitness and activity as separate heart disease risk factors: a meta-analysis. *Med Sci Sports Exerc*. 2001 May ; 33(5): 754–761.
15. Erikssen G. Physical fitness and changes in mortality: the survival of the fittest. *Sports Med* 2001; 31: 571-6.
16. Erikssen G, Liestol K, Bjornholt J, et al. Changes in physical fitness and changes in mortality. *Lancet* 1998;352:759-62.
17. Paffenbarger RS Jr, Hyde RT, Wing AL, et al. The association of changes in physical activity level and other lifestyle characteristics with mortality among men. *N Engl J Med* 1993;328:538-45.
18. Kushi LH, Fee RM, Folsom AR, et al. Physical activity and mortality in post-menopausal women. *JAMA* 1997;277:1287
19. Leon AS, Connett J, Jacobs DR Jr., et al. Leisure-time physical activity levels and risk of coronary heart disease and death. The Multiple Risk Factor Intervention Trial. *JAMA* 1987;258:2388-95.