Rethinking our approach to physical activity

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See Editorial page 188

See Articles page 219

See Series pages 247, 258, 272, 282, and 294

> "Lack of activity destroys the good condition of every human being while movement and methodical physical exercise save it and preserve it"
>
> *Plato*

This Series on physical activity is not about sport and it is about more than just exercise. It is about the relationship between human beings and their environment, and about improving human wellbeing by strengthening that relationship. It is not about running on a treadmill, whilst staring at a mirror and listening to your iPod. It is about using the body that we have in the way it was designed, which is to walk often, run sometimes, and move in ways where we physically exert ourselves regularly whether that is at work, at home, in transport to and from places, or during leisure time in our daily lives.

There is substantial evidence to show that physical inactivity is a major contributor to death and disability from non-communicable diseases (NCDs) worldwide. Since 2005, *The Lancet* has been part of a worldwide effort to implement action on NCDs. Increasing levels of physical activity is one such priority.[1] However, unlike other NCD risk factors, such as tobacco, diet, and alcohol, the importance of physical activity has been slow to be recognised, and the emphasis to tackle it at a population level has not been forthcoming.

Physical activity is a neglected dimension of prevention and intervention worldwide, especially in low-income and middle-income countries. One problem is that physical activity is often perceived only in the context of controlling obesity, and therefore physical inactivity is regarded as a minor or secondary risk factor for NCDs. But an Article in this Series by I-Min Lee and colleagues[2] should cause us to rethink. The authors quantify the ill-effects of inactivity in the first study of its kind with detailed data for each country, where available. They estimate that physical inactivity causes 6–10% of all deaths from the major NCDs (coronary heart disease, type 2 diabetes, and breast and colon cancers). Furthermore, they show that inactivity causes 9% of premature mortality, or more than 5·3 of the 57 million deaths that occurred worldwide in 2008.[3] This figure equates to as many deaths as tobacco causes globally, which is uniformly regarded as a major NCD risk factor.[4]

But it is a mistake to view physical activity only in terms of its disease-specific associations. The benefits of physical activity are far-reaching and extend beyond health alone. Being physically active is a major contributor to one's overall physical and mental wellbeing. Positive outcomes include a sense of purpose and value, a better quality of life, improved sleep, and reduced stress, as well as stronger relationships and social connectedness. Additionally, promoting active modes of travel, such as walking and cycling, are good for the environment, which in turn also has a positive impact on health.

But how do we encourage a behaviour that should be part of everyday life? For too long the focus has been on advising individuals to take an active approach to life. There has been far too little consideration of the social and physical environments that enable such activity to be taken. Regular activity must, of course, be done by the individual but, as this Series shows, efforts beyond the health sector through social and environmental change will be necessary if we are to see greater uptake of this healthier behaviour in people's lives.

One might conclude that this Series should not be published in *The Lancet*. Physical activity is not a medical or pathological predicament but more a cultural challenge: to create a lifestyle inclusive of activity. It could be argued that this Series would be better placed in a national newspaper, a women's magazine, or a television or radio programme. But the first step in what must be a social revolution towards an active, and away from a

Children's Games (Kinderspiele), 1560 (oil on panel), Bruegel, Pieter the Elder (c.1525–69)/Kunsthistorisches Museum, Vienna, Austria/The Bridgeman Art Library

passive, physical and mental life should be to assemble the best experts in the field and the best evidence to understand what we know about the relationship between human health and physical activity. This goal is the purpose of our Series.

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2 Lee I-M, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT, for the Lancet Physical Activity Series Working Group. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet* 2012; published online July 18. http://dx.doi.org/10.1016/S0140-6736(12)61031-9.
3 WHO. Global Health Observatory Data Repository. 2011. http://apps.who.int/ghodata (accessed June 26, 2012).
4 WHO. Global health risks: mortality and burden of disease attributable to selected major risks. Geneva: World Health Organization, 2009.

Physical activity: more of the same is not enough

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For millennia, exercise has been recommended by physicians and scholars. For more than 60 years, science has shown that the health benefits of a physically active lifestyle are extensive and robust. In 1953, *The Lancet* published landmark papers by Jerry Morris and colleagues on the associations between physical activity at work and coronary heart disease.[1,2] Sedentary London Transport Authority bus drivers were at a higher risk of cardiac events than were their more active conductor peers. These publications laid the groundwork for physical activity epidemiology and stimulated the development of substantial research linking inactivity to increased risk of many non-communicable diseases.

We now know that physical inactivity is a significant predictor of cardiovascular disease, type 2 diabetes mellitus, obesity, some cancers, poor skeletal health, some aspects of mental health, and overall mortality, as well as poor quality of life. Men and women of all ages, socioeconomic groups, and ethnicities are healthier if they achieve the public health recommendation of at least 150 min per week of moderate-intensity aerobic physical activity, such as brisk walking.[3] Immediate and future health benefits are also clearly described for children and adolescents, for whom at least 60 min per day of vigorous or moderate-intensity physical activity is recommended.[4,5] Muscular strengthening physical activities are also recommended for health improvement.[3]


AFP/Getty Images

In 2008, 63% of deaths worldwide were due to non-communicable diseases, mainly diseases of the heart and vascular system, diabetes mellitus, cancers, and obstructive pulmonary disease. Physical activity was recently considered a cornerstone for combating non-communicable diseases by the UN.[6] WHO recognises physical inactivity as one of the leading global risk factors for morbidity and premature mortality.[7] Further, physical inactivity directly affects many risk factors for morbidity and mortality including adiposity, raised blood glucose concentrations, high blood pressure, and a poor lipid profile. Furthermore, people benefit from even modest activity. Compared with inactive individuals, those who were active but at levels less than recommended (about 1·5 h per week), lived 3 years longer.[8]

Clearly, physical activity has vast potential to improve health throughout the world. As the scientific contributions of exercise science and public health have advanced our understanding of the health effects and consequences, the specialty of physical activity and public health has emerged. Public health practice