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Editorial Office Address

Editor
 Singapore Medical Journal
 Singapore Medical Association
 2 College Road
 Singapore 169850
 Fax: (65) 6224 7827
 Email: smj@sma.org.sg
 Website: www.sma.org.sg/smj

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Edward Jenner (1749 - 1823):
 conqueror of smallpox
 (Refer to pages 507-508)

Recommending physical activity to patients

B Tan

Societal trends in occupation, transportation, household management, and non-physical leisure activity (e.g. increased television viewing and computer games) have contributed to physical inactivity worldwide. In Singapore, this trend is evident as well. In this issue of the Singapore Medical Journal, Teh and Ong describe the physical activity patterns in Singaporeans⁽¹⁾. Their survey shows that between 1997 and 2001, the amount of time Singaporeans spent on physical activities fell by 31%. Work-based physical activity fell 72% from 200 minutes per week to 56 minutes, as work became more sedentary in nature, and the amount of time Singaporean women spent on housework fell by more than one-half. Unfortunately, this fall in work-based physical activity and housework was only partially offset by a slight increase in non-discretionary activities such as walking and stair climbing. There was no significant difference in the time spent on sports between 1997 and 2001.

This decrease in physical activity level is taking place despite an ever-increasing body of evidence to support the health benefits of physical activity and exercise⁽²⁾. Exercise prevents heart disease, stroke, type 2 diabetes, obesity, gallstones, and as many as 12 types of cancer. It builds stronger bones, reduces resting blood pressure, improves plasma lipid levels, and improves strength, endurance, flexibility and agility. There are also the postulated benefits of decreased anxiety and depression, and enhanced feelings of well-being. Moreover, physical activity is beneficial to those who have existing "lifestyle diseases", as exemplified by patients with acute myocardial infarct who undergo cardiac rehabilitation exercises as a component of secondary prevention.

To reverse the decline in physical activity and incorporate exercise in the prevention and management of a multitude of diseases, doctors are increasingly expected to prescribe exercise to their patients. To facilitate this, there are general guidelines, such as those set by the American College of Sports Medicine⁽³⁾, which doctors can use to prescribe the appropriate exercise modality, intensity, duration, and frequency. Whereas jogging alone was previously considered as adequate exercise, it is now recognised that a general exercise programme should include not only aerobic or cardiovascular activities, but also strength and flexibility training. This requires doctors to be familiar with not only aerobic training and stretching routines, but also resistance training methods⁽⁴⁾. Adding to the complexity of exercise prescription, there are population- and disease-specific exercise guidelines for hypertension⁽⁵⁾, obesity⁽⁶⁾, type 2 diabetes⁽⁷⁾, and the elderly⁽⁸⁾.

Public health recommendations endorsed by the United States (US) Surgeon General advise that individuals should accumulate 30 minutes of at least moderate-intensity activity on most, if not all, days of the week⁽²⁾.

Changi Sports
 Medicine Centre
 Changi General
 Hospital
 2 Simei Street 3
 Singapore 529889

B Tan, MBBS,
 DFD, MSpMed
 Consultant Sports
 Physician and Head

Correspondence to:
 Dr Benedict Tan
 Tel: (65) 6850 3571
 Fax: (65) 6260 1712
 Email: benedict_tan@
 cgh.com.sg

With the limited contact time in the clinic setting, it is not easy for doctors to encourage their patients to exercise. To motivate, set tangible exercise targets, encourage self-monitoring, and facilitate compliance to exercise recommendations, a tool that is useful to both doctor and patient is the pedometer⁽⁹⁾. Also known as a stepometer, this is an affordable (S\$15-50), unobtrusive instrument worn like a pager. It detects movement throughout the day. Some come with a calorie counter, FM radio or even a heart rate monitor. The first commercial pedometer originated in Japan in 1965. It has since been a popular tool in various national physical activity initiatives such as the “10,000 Steps Rockhampton Project” in Australia, the “First Step Program” in Canada, and the “Colorado on the Move” campaign and “Step It Up Week” programme in the United States of America. In Singapore, the “Step With It, Singapore!” programme was launched in primary schools in 2003 and adapted for workplace health promotion in 2004. At this year’s National Healthy Lifestyle Day, 12,500 pedometers were distributed to participants.

Though user-friendly, the use of pedometers will be limited unless accompanied by appropriate guidelines and targets. As a baseline, individuals who record <5000 steps per day may be classified as “sedentary”, 5,000-7,499 steps/day as “low active”, 7,500-9,999 steps/day as “somewhat active”, $\geq 10,000$ steps/day as “active”, and >12,500 steps/day as “highly active”⁽⁹⁾. The magic target that is appropriate for the majority of the public seems to be 10,000 steps per day⁽⁹⁾: The Japanese named the pedometer “*manpo-kei*”, which literally translated means “ten thousand steps meter.” This level of activity works out to an energy expenditure of 300-400 kcal/day (depending on walking speed and body mass) and more than meets the amount of physical activity recommended by the US Surgeon General. Studies have shown that accumulating an average of 10,000 steps per day was associated with reduced body fat⁽¹⁰⁾, lower blood pressure⁽¹¹⁾, and improved glucose tolerance⁽¹²⁾.

While a fixed target of 10,000 steps per day is easy to remember and provides a concrete goal, it is probably not sustainable for the elderly and those with chronic diseases. This target is also too low for children. Wang et al (unpublished data) reported in 2003 that Singaporean primary school children were already averaging a baseline (pre-intervention) count of 9,169 steps per day. Hence, for certain sub-populations such as the elderly, children, and those with medical problems, doctors could instead set an incremental target of approximately 2,500 steps or more above the baseline⁽⁹⁾. Limitations of the pedometer include the inability to quantify exercise intensity, and poor sensitivity to non-impact activities such as swimming, cycling and resistance training. Despite these, pedometers have nevertheless been an invaluable adjunct to the promotion of physical activity.

In summary, physical activity will continue to gain further prominence in disease prevention, disease management, and public health. Exercise prescription will become even more refined and complex. As a result, doctors will need to be more involved in exercise prescription and the promotion of physical activity. We need to aim at providing holistic care for their patients. **SMD**

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Publisher

Singapore Medical Association
Level 2, Alumni Medical Centre
2 College Road
Singapore 169850
Tel: (65) 6223 1264
Fax: (65) 6224 7827
Email: smj@sma.org.sg
URL <http://www.sma.org.sg>

Design and Advertising

Equity Communications Pte Ltd
145 Neil Road
Singapore 088874
Tel: (65) 6324 7822
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Tel: (65) 6324 4337
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EDITOR'S NOTE

The Singapore Medical Council (SMC) has recently announced that 1 non-core point per article will be awarded for the Singapore Medical Journal (SMJ) Category 3B CME programme. Readers will therefore have the opportunity to earn 2 CME points in each issue of SMJ, up to the current maximum of 36 Category 3B CME points per 2-year qualifying period. Candidates will no longer receive email notification of their results. All respondents are advised to check the SMJ CME website (<http://www.sma.org/cme/smj>). The MCR numbers of successful candidates will be posted online by the 20th of the month following the deadline for submission of answers. The SMJ editorial office will continue to submit lists of successful candidates to the SMC.

Professor Wilfred C G Peh
Editor
Singapore Medical Journal