

Essential Evidence on a page: No. 17
Using pedometers to increase physical activity and improve health
Adrian Davis 23/04/09

Top line: There is strong evidence that pedometer users increase steps taken by an average of over 2000 steps more than among those not using pedometers.

Over recent years pedometers have increasingly been used as a tool to motivate individuals to increase their levels of physical activity. There are a growing number of published articles, and considerable amount of grey literature, reporting that pedometer use can encourage individuals to increase their daily step count. Studies have been conducted in a variety of settings; work-based, community-based and health care and with a variety of groups; patients, employees, community groups and school children. These are largely cross-sectional studies which suggests, among other outcomes, that individuals who walk more tend to be thinner than those who walk less. Because of study design such evidence cannot claim causality but only that there is an association between higher step counts and lower weight or that encouraging sedentary individuals to increase step counts improves health or helps them lose weight.

A meta-analysis^{1 2} has provided an assessment of the strength of evidence that pedometer use can improve levels of physical activity (steps per day), BMI, blood pressure and cholesterol levels. The objective of the review was to evaluate the evidence for an association of pedometer use with increased physical activity and improved health outcomes. The review of the pooled data found that the strength of correlation between intervention and outcome variables was strong. 26 studies met the inclusion criteria which meant the total number of participants in the review was 2767. Of these, there were 8 Randomised Control Trials (RCTs)³ and a further 18 observational studies which compared subjects average number of steps per day post intervention, with their own baseline count. The mean intervention period was 18 weeks.

This is the first published synthesis of quantitative evidence on the effectiveness of pedometers in increasing physical activity. The review concludes that pedometer use can lead to significant increases in physical activity and significant decreases in body mass index and blood pressure in the short term and thereby gives credence to the extensive lay literature advocating the use of pedometers for this purpose. In both the RCTs and among the observational studies pedometer users increased their steps by an average of over 2000 more than the control participants.

The most significant weakness of the evidence remains that there have been no studies that have yet evaluated the impact of pedometers on physical activity long term (ie 1 year or more). Hence, it is difficult to be confident of how well the effects of pedometer use endure. Nonetheless, the meta-analysis confirms there is evidence of effectiveness for pedometers as a motivational tool which can improve physical activity levels at least over the short term.

¹ Bravata, D, et al., 2007 Using Pedometers to Increase Physical Activity and Improve Health; A Systematic Review, *Journal of the American Medical Association*; 298 (19): 2296-2304.

² See Essential Evidence No 3

³ See Essential Evidence No 3