Pedometer use improves physical activity levels, BMI and blood pressure

Pedometers have increasingly been used to promote physical activity, yet there is little evidence that this motivational method is effective. Bravata and colleagues performed a systematic review to assess the relationship between pedometer use, physical activity and health outcomes.

The researchers examined data from eight randomized controlled trials and found that participants who used pedometers walked an average of 2,491 more steps per day than did controls (95% CI 1,098–3,885; $P<0.001$). A similar effect was seen when interpreting the data from 18 observational studies that were also analyzed in the review. These studies showed that physical activity was increased by 2,183 steps per day among pedometer users compared with controls (95% CI 1,571–2,796; $P<0.001$).

Combining the study populations enrolled in the randomized controlled trials and observational studies yielded a total cohort of 2,767 patients (mean age 49 years, 85% women). The BMI of participants who used pedometers decreased by 0.38 from baseline ($P=0.03$)—an effect that was significantly associated with increasing age, increasing percentage of white participants and the setting of a step goal in combination with pedometer use. Furthermore, participants who used pedometers had significant decreases in both systolic (3.8 mmHg; $P<0.001$) and diastolic (0.3 mmHg; $P=0.001$) blood pressure.

The use of pedometers seems to encourage physical activity and result in short-term health improvements. Large randomized trials will be needed before the long-term effects of these devices can be fully understood.

Original article Bravata DM *et al.* (2007) Using pedometers to increase physical activity and improve health: a systematic review. *JAMA* **298:** 2296–2304

Atrial natriuretic peptide reduces infarct size following AMI

Reducing infarct size is an important treatment goal among patients who experience an acute myocardial infarction (AMI). Two parallel, single-blind trials were conducted at 65 hospitals in Japan to assess the effects of atrial natriuretic peptide (ANP) and of nicorandil on infarct size among patients with AMI undergoing reperfusion treatment.

In the J-WIND-ANP study, 277 patients were assigned intravenous ANP for 3 days following reperfusion treatment, whereas 292 patients received placebo. After a median of 2.7 years' follow-up, evaluation of creatine kinase levels revealed that infarct size was reduced by 14.7% (95% CI 3.0–24.9%) in patients who took ANP compared with those who took placebo. In addition, ANP treatment was associated with an increase in left ventricular ejection fraction 6–12 months after administration compared with placebo (ratio 1.05, 95% CI 1.01–1.10; $P=0.024$).

The second trial, J-WIND-KATP, saw 276 patients with AMI receive intravenous nicorandil, and 269 patients receive placebo, following reperfusion therapy. Nicorandil, however, had no significant effect on infarct size or left ventricular ejection fraction in comparison with placebo.

Severe hypotension was the only serious adverse event associated with either drug, affecting 29 drug recipients and 1 control in the ANP trial, and 3 drug recipients and no controls in the nicorandil trial. Overall, this study suggests that ANP could be a beneficial adjunct to reperfusion therapy following AMI. Further trials to assess the clinical outcomes of this treatment are warranted.

Original article Kitakaze M *et al.* (2007) Human atrial natriuretic peptide and nicorandil as adjuncts to reperfusion treatment for acute myocardial infarction (J-WIND): two randomised trials. *Lancet* **370:** 1483–1493

AZD6140: a promising new treatment for patients with acute coronary syndromes

Antiplatelet therapy is standard in most cases of ST-segment elevation and non-ST-segment elevation (NSTE) acute coronary syndromes (ACS). Aspirin and clopidogrel are both effective treatments, and a combination of these agents gives greater protection against arterial thromboembolic events than does either drug alone. Patients who do not respond well to clopidogrel might benefit from new drugs such as AZD6140, an oral $P2Y_{12}$ receptor antagonist currently undergoing clinical trials.

The Dose conflrmation Study assessing anti-Platelet Effects of AZD6140 vs clopidogRel