



Pedometers: increasing physical activity

Intervention

Wearing or carrying a pedometer or similar device.

Indication

Australian physical activity guidelines recommend that adults accumulate 150–300 minutes of moderate physical activity or 75–150 minutes of vigorous physical activity per week.

Any condition where increasing physical activity has shown to be of benefit (e.g. type 2 diabetes, heart disease, chronic obstructive pulmonary disease, depression) and for general health and wellbeing.

Using a movement device has been shown to increase the average daily step number by >2000.

Greater step number is associated with lower body mass index (BMI), greater high-density lipoprotein levels and lower fasting glucose levels.

Availability

There is a large and increasing variety of movement tracking devices available. These devices fit into three broad (and often overlapping) categories:

1. Pedometers, which are simple devices that count and display steps. Pedometers are usually worn on the waist band/belt in line with the thigh, although some have been developed to be carried in a pocket or worn on a lanyard. Accuracy has been an issue, although newer technology has improved this. Pedometers cost around \$20–\$80.
2. Accelerometers, which measure force of motion and convert this to activity data (e.g. steps, distance, active minutes, sleep) via on-board algorithms. Most sync to a smartphone or computer app where activity can be viewed and notifications received. Accelerometers range in price from around \$80 to over \$200.
3. Smart watches, which typically use GPS tracking and have capabilities such as heart rate monitoring. These typically cost over \$300.

There are also smartphone apps that track steps, using the on-board accelerometer; however, some have been shown to be so inaccurate as to be of no use.

Many devices offer the ability of social interaction with people using the same device (or via interconnected apps such as MyFitnessPal).

Description

Activity targets can either be a set amount (e.g. 10 000 steps per day) or an increase from baseline (e.g. 2000 steps more than usual average).

The device is worn continually or during waking hours (depending on design).

Progress is either recorded in an app or a manual diary (see Consumer resources), which is reviewed at set intervals.





Tips and challenges

- The more steps the better, however targets should be adjusted to age. For example, 10 000 steps is suitable for young and middle-aged adults but 8000 may be more appropriate for older people.
- Part of the success of tracking devices may be due to motivational strategies, such as reminders and encouragement notifications, as well as social competition and collaboration when using socially connected devices/apps.
- 'Although wearable devices have the potential to facilitate health behaviour change, this change might not be driven by these devices alone. Instead, the successful use and potential health benefits related to these devices depend more on the design of the engagement strategies than on the features of their technology. Ultimately, it is the engagement strategies—the combinations of individual encouragement, social competition and collaboration, and effective feedback loops—that connect with human behaviour.' (Patel, 2015)
- The RACGP SNAP guidelines provide an overview of motivational interviewing and assessing activity behaviour
<http://www.racgp.org.au/your-practice/guidelines/snap/2-approach-to-preventive-care-in-general-practice/22-motivational-interviewing/>
<http://www.racgp.org.au/your-practice/guidelines/snap/3-applying-the-5as-to-each-risk-factor/35-physical-activity/>
- The level of technology needs to suit the patient. It may be worth having some simple devices that can be lent for patients to try.

Grading

NHMRC Level 1 evidence for increased activity.

References

Bravata DM, Smith-Spangler C, Sundaram V et al. Using pedometers to increase physical activity and improve health: a systematic review. *Journal of the American Medical Association* 2007;298(19):2296–304.

Ewald B, Attia J, McElduff P. How many steps are enough? Dose-response curves for pedometer steps and multiple health markers in a community-based sample of older Australians. *Journal of Physical Activity and Health* 2014;11:509–18.

Patel MS, Asch DA, Volpp KG. Wearable devices as facilitators, not drivers, of health behaviour change. *Journal of the American Medical Association* 2015;313(5):459–60.

Consumer resources

- Downloadable pedometer diary
- 10,000 Steps Australia pedometer workplace challenge http://www.10000stepsaustralia.com/Why-get-involved/Why-Choose-Us?gclid=Cj0KEQjw8-GtBRCMI7m54PzgjNQBEiQAIZckv8HqDKOwd8yubq-QZ6f1xtW79_fcEvSti-X3D1E3InsaAkXh8P8HAQ



Downloads

Pedometer Diary

Day	Date	Time Commenced	Time Finished	Number of Steps			Complete day
1							
2							
3							
4							
5							
6							
7							
8							
Return							