

Motivating patients to activity

A light at the end of the couch?

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Clinical question

How can we motivate our patients to participate in regular physical activity?

Evidence

- A 2007 systematic review (26 studies, 2767 patients) assessed the use of pedometers to increase physical activity levels and improve health¹:
 - Pedometers increased the mean steps per day by 2491 in randomized controlled trials ($P < .001$) and 2183 in observational studies ($P < .0001$).
 - Having a "step goal" (most commonly, working up to 10000 steps a day) predicted increased activity ($P = .001$).
 - Mean intervention duration was 18 weeks.
 - There was heterogeneity in study design and the corresponding results ($P < .001$).
- A 2009, lower-quality systematic review (32 studies) of pedometers² also found the following:
 - an increase of approximately 2000 steps per day;
 - the benefit of having a "step goal" ($P < .001$); and
 - similar benefits in studies longer and shorter than 15 weeks.
- Newer randomized controlled trials show that using pedometers increases daily steps by approximately 2000 or more,^{3,4} including sustained results for up to 1 year.⁴

Context

In many studies, increased activity reduces mortality:

- A prospective cohort study (252 925 patients) found that regular moderate activity (brisk walking ≥ 30 min most days) was associated with a 27% (95% confidence interval [CI] 22% to 32%) relative decrease in overall mortality compared with no activity.⁵
 - Regular vigorous activity reduced mortality by 50% (95% CI 46% to 54%).
- A prospective cohort study (9777 men) found the mortality rate of active men was 33% (95% CI 23% to 47%) of that of inactive men (40 vs 122 deaths per 10000 patient years, respectively).⁶

Other benefits of pedometers include the following:

- weight reduction of 1.3 (95% CI 0.7 to 1.8) kg in 16 weeks⁷;
- reductions in systolic blood pressure of 3.8 mm Hg ($P < .001$) over 18 weeks¹;
- improved blood glucose (BG) levels in patients with impaired glucose tolerance up to 12 months later (ie, fasting BG reduced by 0.31 (95% CI 0.03 to 0.59) mmol/L; 2-hour BG reduced by 1.3 (95% CI 0.4 to 2.2) mmol/L)⁴;
- can cost less than \$30.

Bottom line

Pedometers, used with specific exercise goals, provide an inexpensive, tangible measure of patients' physical activity and have been demonstrated to increase physical activity levels.

Implementation

Written goal-oriented exercise programs increase patients' physical activity levels.⁸ When recommending a pedometer, prescribing a step goal will help increase activity. A sample "prescription" might look like this:

1. Wear your pedometer every day for 1 week.
2. Calculate your daily steps.
3. Add 500 steps per day to your daily average. Walk that each day for the next week.
4. Repeat step 3, adding 500 steps to last week's daily goal, and walk that each day for the next week.
5. Continue until you reach 10000 steps per day.

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The opinions expressed in this Tools for Practice article are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

References

1. Bravata DM, Smith-Spangler C, Sundaram V, Gienger AL, Lin N, Lewis R, et al. Using pedometers to increase physical activity and improve health: a systematic review. *JAMA* 2007;298(19):2296-304.
2. Kang M, Marshall SJ, Barreira TV, Lee J. Effect of pedometer-based physical activity interventions: a meta-analysis. *Res Q Exerc Sport* 2009;80(3):648-55.
3. Baker G, Gray SR, Wright A, Fitzsimons C, Nimmo M, Lowry R, et al. The effect of a pedometer-based community walking intervention "Walking for Wellbeing in the West" on physical activity levels and health outcomes: a 12-week randomized controlled trial. *Int J Behav Nutr Phys Act* 2008;5:44.
4. Yates T, Davies M, Gorely T, Bull F, Khunti K. Effectiveness of a pragmatic education program designed to promote walking activity in individuals with impaired glucose tolerance. *Diabetes Care* 2009;32(8):1404-10. Epub 2009 Jul 14.
5. Leitzmann MF, Park Y, Blair A, Ballard-Barbash R, Mouw T, Hollenbeck AR, et al. Physical activity recommendations and decreased risk of mortality. *Arch Intern Med* 2007;167(22):2453-60.
6. Blair SN, Kohl HW, Barlow CE, Paffenbarger RS Jr, Gibbons LW, Macera CA. Changes in physical fitness and all-cause mortality. A prospective study of healthy and unhealthy men. *JAMA* 1995;273(14):1093-8.
7. Richardson CR, Newton TL, Abraham JL, Sen A, Jimbo M, Swartz AM. A meta-analysis of pedometer-based walking interventions and weight loss. *Ann Fam Med* 2008;6(1):69-77.
8. Swinburn BA, Walter LG, Arroll B, Tilyard MW, Russell DG. The green prescription study: a randomized controlled trial of written exercise advice provided by general practitioners. *Am J Public Health* 1998;88(2):288-91.



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