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FAST TRACK

**Patients who
used pedometers
walked more,
lost weight
without dieting,
and improved
their systolic
blood pressure**

PURLs methodology

This study was selected and evaluated using FPIN's Priority Updates from the Research Literature (PURL) Surveillance System methodology. The criteria and findings leading to the selection of this study as a PURL can be accessed at www.jfponline.com/purls.

Have pedometer, will travel

Practice changer

Advise your patients to use a pedometer, set a step goal, and keep a step diary. This simple intervention takes only a few moments and is effective in increasing patients' physical activity and decreasing both body-mass index (BMI) and systolic blood pressure.¹

Strength of recommendation

A: Based on a meta-analysis of randomized controlled trials (RCTs) and observational studies

Bravata DM, Smith-Spangler C, Sundaram V et al. Using pedometers to increase physical activity and improve health: a systematic review. *JAMA* 2007; 298:2296-2304.

ILLUSTRATIVE CASE

Your first 4 patients this morning were a 50-year-old woman with metabolic syndrome, a 62-year-old obese man with high blood pressure, a 44-year-old woman with depression, and a 75-year-old man with a recent admission for myocardial infarction. In addition to managing their medications and reviewing lab results, you have already spent a lot of time discussing the benefits of exercise with each of these patients.

As you prepare to talk with your next patient—a 28-year-old woman with a BMI of 29 whose chief complaint is “wants to lose weight”—you wonder if there are any simple, brief, effective interventions to help your patients increase their physical activity.

BACKGROUND

■ A long way to go

Although there is no evidence that simply advising patients to walk has any effect, primary care physicians frequently recommend walking as a form of exercise—it is free, requires no special equipment, and is readily accessible to most motivated patients.

The Centers for Disease Control and Prevention recommends that adults engage in moderate physical activity for at least 30 minutes a day, at least 5 days per week.² Yet 40% of adults do not engage in any leisure-time physical activity. This percentage is higher in women (43%), African-Americans (52%), and Hispanics (54%).³

The health benefits of exercise are clear. Regular physical activity has been shown to decrease overweight and obesity.⁴ It has also been shown to improve control of type 2 diabetes⁵ and hypertension.⁶ Frequent exercise is associated with a decreased mortality rate.⁷ Walking has been shown to decrease the risk of cardiovascular events in women, regardless of BMI.⁸

Walking has similarly been shown to decrease overall mortality among men.⁹ Cardiovascular fitness has also been shown to decrease mortality in adults over 60, even in the absence of weight loss.¹⁰

CLINICAL CONTEXT

■ USPSTF: Advice alone won't kick-start exercise

We realize, of course, that most of our adult patients could benefit from regular exercise. Exercise is included in the treat-

Eureka! A simple, practical intervention

At last, the humble pedometer gives us a brief intervention for physical exercise that works. Yes, we need more research for lots of reasons (always), but this PURL gives us a practical tool that can be recommended in a few minutes, consistent with the realities of daily practice.

The outcomes from this intervention are not dramatic. No lives were saved, no catastrophic diseases averted. Yet regular exercise is so fundamentally important to just feeling good and having energy for daily life, not to mention lowering blood pressure and weight.

My guess is that this could become a handy recommendation used daily in family medicine and

other primary care practices.

I am interested to know whether you already recommend pedometers to your patients. If not, does this seem like a worthwhile change in your practice?

On a personal note, I made a New Year's resolution to increase my physical activity. As soon as I finish this commentary, I am ordering a pedometer.



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ment guidelines for overweight/obesity, hypertension, type 2 diabetes, metabolic syndrome, cardiovascular disease, chronic pain, peripheral vascular disease, and depression.¹¹

However, few office-based interventions have been shown to lead to increased physical activity. Patients sometimes resist making lifestyle changes, and providers are uncertain how to effectively promote physical activity. Furthermore, counseling patients to exercise without a specific intervention has not been shown to lead to long-term increases in physical activity. The US Preventive Services Task Force (USPSTF) finds there is insufficient evidence to recommend behavioral counseling alone for exercise, citing the lack of evidence for long-term efficacy.^{12,13}

STUDY SUMMARY

■ Pedometer users walked 2491 additional steps

This meta-analysis included 26 RCTs and observational studies of pedometer use in adult outpatients that reported a change in the number of steps walked per day. The 2767 participants in these studies were 85% women, with a mean age of 49. In the 7 studies that reported race, 93% of patients were white. At baseline, most participants were overweight, with normal blood pressure (mean 129/79

mm Hg) and relatively well-controlled lipid levels (mean total cholesterol 198 mg/dL, HDL 52 mg/dL, LDL 113 mg/dL). The mean baseline activity level was 7473 steps per day (range 2140–12,371). Duration of interventions ranged from 3 to 104 weeks, with a mean of 18 weeks. Sixteen of the studies used the Yamax pedometer, which has been validated for accuracy and reliability.

Participants in the RCTs who used pedometers increased their physical activity by 2491 steps per day more than controls. After excluding 1 study with a much higher increase in physical activity than the others, the increase was 2004 steps per day (95% confidence interval [CI], 878–3129; $P < .001$). In the observational studies, participants walked 2183 steps per day more than they had at baseline (95% CI, 1571–2796; $P < .001$). Overall, pedometer users increased their number of steps by 27% over baseline.

Step goal and step diary

Only studies that included a step goal and required participants to keep a step diary showed a significant increase in physical activity with pedometer use. There were no differences in outcomes based on duration of the intervention, inclusion of physical activity counseling, or the brand of pedometer used.

CONTINUED

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Are you already advising your patients to use pedometers? If not, do you plan to do so?

We are interested in your opinion
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TABLE 1

Pre- and post-intervention body mass index and blood pressure

VARIABLE	# STUDIES (# PARTICIPANTS)	PRE-INTERVENTION MEAN (SD)	MEAN CHANGE (95% CI)	P VALUE
Body-mass index	18 (562)	30 (3.4)	-0.38 (-0.05 to -0.72)	.03
Systolic blood pressure	12 (468)	129 (7.5)	-3.8 (-1.7 to -5.9)	<.001
Diastolic blood pressure	12 (468)	79 (4.5)	-0.3 (0.02 to -0.46)	.001

BMI and BP improved; lipids, glucose did not

Intervention participants had a statistically significant decrease in BMI of 0.38, which was associated with older age ($P=.001$), having a step goal ($P=.04$), and longer duration of the intervention ($P=.07$, trend). Intervention participants also had a significant decrease in systolic blood pressure of 3.8 mm Hg and diastolic blood pressure of 0.3 mm Hg (TABLE 1), which was associated with greater systolic blood pressure at baseline ($P=.009$).

There were no significant differences in serum lipids or fasting serum glucose in the studies that reported these variables.¹

WHAT'S NEW?

Weight loss without dieting

This study is the first large meta-analysis to show that pedometer use is an effective intervention for promoting physical activity. Another recent meta-analysis shows that pedometer use is also effective for short-term weight loss, even in the absence of dietary changes.¹⁴

Pedometers and goal-setting are simple, relatively inexpensive ways to help patients become physically active. According to systematic reviews,^{15,16} telephone-based programs, encouraging stair use, and creating exercise space are other effective interventions to promote physical activity. Some of these interventions are at least as effective as pedometers; however, only encouraging stair walking and pedometer use are practical office-based interventions.

CAVEATS

Price and quality

A 2004 *Consumer Reports* article ranked pedometers by accuracy, ease of use, and features.¹⁷ Accurate step counts allow patients and physicians to assess whether step goals are being met. Pedometers are more accurate when recording fast walking (2.5–3.0 mph), compared with slow walking. Pedometers may therefore be less accurate in the elderly, very obese, or those who walk slowly.¹⁸

Negotiate the goal, patient keeps diary

Remember that patients must be counseled to set a step goal and keep a step diary. Most patients will have an initial step goal between 6000 and 10,000 steps per day. The step goal should be individualized to each patient's current level of activity and gradually increased as activity level increases.

Schedule monthly or semi-monthly follow-up visits to evaluate progress towards activity or weight loss goals and to re-evaluate the step goal. Before beginning an exercise regimen, including walking, patients must be healthy enough for physical activity. In some cases, patients will need stress testing or other evaluation before using a pedometer to increase activity.

CHALLENGES TO IMPLEMENTATION

Time-wise

Counseling patients on the use of pedometers, and coaching them to set an appropriate step goal and keep a step diary, will take up time during the office visit, but it should be a brief intervention

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2000 steps is about 1 mile. 10,000 steps is a common daily step goal

and therefore feasible.²¹

Organizing your office staff to assist you, and using a patient handout containing the basic information on pedometers, could reduce the demands on your time. Including information from the 2004 *Consumer Reports* article and Web sites with pedometers prices (such as www.pedometersusa.com and newlifestyles.com) should provide a good start for those patients who want more information. ■

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TABLE 2

Consumer Reports top-rated pedometers¹⁷

Omron Healthcare HJ-112	\$28.45*
FreeStyle Tracer	\$15.99*
New Lifestyles NL-2000	\$59.95†

* Price from www.pedometersusa.com, accessed December 12, 2007.

† Price from newlifestyles.com, accessed December 12, 2007.

Omron, Freestyle, Yamax, Walk4Life, and New Lifestyles have been shown to be reliable brands.^{19,20}

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Omron Healthcare HJ-112



FreeStyle Tracer



New Lifestyles NL-2000



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**Counseling
should be a brief
intervention and
therefore feasible**