

Pedometer Use Motivates BMI, Blood Pressure Dip

BY MARY ANN MOON
Contributing Writer

Using a pedometer significantly increases a patient's physical activity level—by a magnitude of about 1 mile of walking per day, results of a meta-analysis suggest.

This increased activity level in turn appears to lead to clinically relevant reductions in body mass index and blood pressure, according to Dr. Dena M. Bravata of Stanford (Calif.) University and her associates.

Pedometers are small, relatively inexpensive devices worn at the hip to count the number of steps a person walks each day. They have recently become popular “as tools for motivating and monitoring physical activity,” with wearers often encouraged to aim for taking 10,000 steps daily. To date, there has been no detailed evidence of the device's effectiveness, however, and no indication that it improves health outcomes, the investigators wrote.

They conducted a meta-analysis of 26 studies, including 8 randomized clinical trials, which reported pedometer use in adult outpatients. Pooling the data allowed them to evaluate outcomes for 2,767 subjects. Mean intervention duration was 18 weeks. The mean subject age was 49 years. Most were overweight and relatively inactive at baseline, but were normotensive.

Using a pedometer significantly raised subjects' activity levels by an average of more than 2,000 steps per day, as long as

it was done in conjunction with a specified step goal and the use of a step diary. Subjects increased their walking whether they worked toward a 10,000-step target or an alternative personalized step goal (JAMA 2007;298:2296-304).

Those who used a pedometer also significantly decreased their body mass index by 0.38 from baseline, but their weight loss was not simply a function of the increase in steps walked every day. “This suggests that participation in the intervention either increased activ-



Using pedometers decreased patients' body mass index as well as their systolic blood pressure.

ity not measured by the pedometer or resulted in decreased caloric consumption, or both,” the researchers noted.

Pedometer users also significantly decreased their systolic blood pressure by nearly 4 mm Hg from baseline, which is notable because most were normotensive. This reduction in blood pressure seemed to be independent of decreases in BMI, again suggesting that use of the device entails benefits not measured by step count alone, they said, adding it is not known if these improvements are sustained long term. ■

'Empty Calorie' Eaters Boost Their Risk for Cardiovascular Problems

BY DOUG BRUNK
San Diego Bureau

Women with a so-called empty calorie diet—high in sweetened beverages, red meat, and desserts—had significantly elevated intima-media thickness, compared with women who followed other dietary patterns, including those high in fat.

The finding comes from an analysis of the Framingham Heart Offspring/Spouse Study that was presented during a poster session at the annual scientific sessions of the American Heart Association.

“Any diet that consists of regular intake of a lot of fatty food, a lot of sugary food including sugary drinks, and not a lot of low-fat dairy, fruits, or vegetables is probably setting a woman up for cardiovascular problems,” lead study author Lisa S. Brown, said in an interview.

Ms. Brown and her associates analyzed data from 1,278 women with a mean age of 58 years who participated in the Framingham Offspring/Spouse Study and who completed the Framingham food frequency questionnaire during 1984-1988, underwent intima-media thickness measurement via ultrasound at exam 6 (1996-1998), and were free of cardiovascular disease at exam 6.

“A lot of intima-media thickness and diet work has looked at specific nutrients—especially antioxidants and different types of fats,” noted Ms. Brown, a registered dietitian who is a doctoral candidate in medical nutrition sciences at Boston University. “None have looked at diet in such a comprehensive manner.” Based on how the women responded to validated Framingham food frequency questionnaire, the researchers placed them into one of five dietary patterns:

► **Heart healthy.** The 250 women in this group eat more fruits and vegetables than women in the other groups. “We think this is a group that changed their diet some time in their adult life and that they make an ef-

fort to be health conscious,” she said.

► **Light eating.** The 612 women in this group are chronic dieters who consume the least amount of sweets and take in the least amount of calories. “But they tend to be a little heavier than we would expect them to be based on their dietary intake,” she said.

► **Wine and moderate eating.** The 45 women in this group consume about two alcoholic drinks per day. Their diet also is highest in cholesterol and lowest in calcium.

► **High fat.** The 266 women in this group “get a lot of their calories from refined grains and vegetable fats both hard and soft, so they get a lot of margarine and oils,” Ms. Brown said. “Their saturated fat is the highest [among] all the groups but for some reason they are also the least likely to be overweight or obese. We don't know why, and we are still trying to figure out what makes this group different from what we expect.”

► **Empty calorie.** The 105 women in this group consume seven to eight times more soda and other sweetened beverages, compared with their counterparts. They also consume more red meat and desserts and eat fewer fruits, vegetables, and micronutrients than women in the other groups. In addition, empty calories dieters are likely to smoke and have a higher body mass index than women in the other groups.

Women in the empty calorie group had maximum carotid intima-media thickness of 1.46 mm, which was significantly higher than that of women in the heart healthy group (1.18 mm), light eating group (1.22 mm), wine and moderate eating group (1.27 mm), and high fat group (1.17 mm). This relationship remained significant even after controlling for risk factors.

“We suspect that ... intima-media thickness is a really good indicator of lifetime exposure to all the things that cause heart disease risk including poor diet, high blood pressure, high cholesterol, smoking, and physical inactivity,” Ms. Brown said. ■

DASH Diet Shown to Lower Risk of CHD, Stroke in Women

BY DOUG BRUNK
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Women who followed the Dietary Approaches to Stop Hypertension diet had significant risk reductions of coronary heart disease and stroke, results from a cohort of participants in the ongoing Nurses Health Study showed.

Previous studies have shown that the diet—heavy in fruits and vegetables—lowers blood pressure and blood lipids, but this marks the first time benefit on a disease state has been demonstrated.

Developed by researchers funded by the National Heart, Lung and Blood Institute in the 1990s, the Dietary Approaches to Stop Hypertension (DASH) diet is low in cholesterol and sodium and contains no more than

30% of calories from fat.

Teresa Fung, Sc.D., and associates, who presented the study at the annual scientific sessions of the American Heart Association, evaluated 88,415 women from the Nurses Health Study who were aged 34-59 years in 1980 and had no history of cardiovascular disease or diabetes. The researchers used a questionnaire to assess the women's diet seven times over 24 years of follow-up and used medical records to tabulate their incidence of cardiovascular disease and stroke.

Patients were divided into quintiles on the basis of how closely they followed the diet, with quintile 1 being poorly followed (the bottom 20%) and quintile 5 being well followed (the top 20%). Cox proportional

hazard analysis was used to adjust for potential confounders such as age, smoking, family history of coronary heart disease (CHD) and stroke, and level of physical activity.

Over the 24-year follow-up there were 1,876 cases of nonfatal myocardial infarction, 883 deaths due to coronary heart disease, and 2,317 strokes. The researchers observed significantly lower risks of CHD and stroke when they compared quintile 5 with quintile 1. (See box.)

“This is more evidence to promote this diet,” said Dr. Fung, associate professor of nutrition at Simmons College, Boston.

She said she was surprised that the magnitude of effect was greater for CHD than for stroke.

The researchers also observed that the risk reduction for stroke

was much stronger in women who had a history of hypertension at baseline, compared with

those who did not. The study was funded by the National Institutes of Health. ■

