Response to Letter Regarding Article, “Six-Minute Walk Is a Better Outcome Measure Than Treadmill Walking Tests in Therapeutic Trials of Patients With Peripheral Artery Disease”

We thank Dr Le Faucheur and colleagues for their interest in our article.1 Le Faucheur et al recommend the community-based global positioning system (GPS) to assess walking performance in people with peripheral artery disease (PAD). A study by Le Faucheur et al2 demonstrates strong correlations between this GPS measure and both the 6-minute walk and treadmill walking performance. The GPS measures unsupervised walking in an outdoor public park over 45 to 60 minutes but is not a measure of typical physical activity during daily life. The method promoted by Le Faucheur et al provides participants with the GPS and instructs them to walk at usual speed for 45 to 60 minutes in a park. This method requires access to a flat public park during stable weather conditions, including the absence of rain, the presence of temperature >10°C, and no more than light winds.3

Although the GPS is an innovative measure with the advantage of measuring participants’ ability to walk over ground, thereby navigating grassy or gravel terrain, several characteristics of this measure pose obstacles to implementation in clinical research. First, this GPS measure is not feasible in locations where weather conditions do not meet the required criteria during many months of the year. Second, the GPS is probably not well suited for a clinical trial, in which follow-up testing should take place as close as possible to intervention completion and under identical conditions compared with the baseline measure. Third, in our experience, some PAD participants refuse the 6-minute walk test because of leg discomfort even during the 6-minute period. A larger proportion may be reluctant to walk outdoors for 45 to 60 minutes. Fourth, some research centers may not have access to a flat public park. Fifth, safety is a potential concern for older, frail PAD participants who are asked to walk alone in a park for 45 to 60 minutes.

We agree that measuring routine physical activity during daily life is distinct from the 6-minute walk, a measure of walking endurance. The 6-minute walk is a measure of functional capacity, whereas physical activity measures actual activity behavior during daily life. In at least 1 study, an exercise intervention improved 6-minute walk but not physical activity during the 6-minute period. A larger proportion may be reluctant to walk outdoors for 45 to 60 minutes. Fourth, some research centers may not have access to a flat public park. Fifth, safety is a potential concern for older, frail PAD participants who are asked to walk alone in a park for 45 to 60 minutes.

Our data suggest that a ceiling effect of the 6-minute walk in PAD participants is unlikely. In our Group Oriented Arterial Leg Study (GOALS) exercise trial,3 among participants randomized to the intervention who were in the highest quartile of 6-minute walk performance at baseline, 70.8% improved their 6-minute walk at follow-up, and 61% improved their treadmill walking performance at follow-up. Thus, among PAD participants in the highest quartile of the 6-minute walk at baseline who were randomized to the intervention, a greater proportion improved their 6-minute walk than improved their treadmill walking performance at follow-up.

References
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