What problems did the researchers set out to study, and why?
The authors wanted to examine the effect of wearing motion control shoes on plantar impact force and to determine if there were any differences in pedographic measurements while wearing motion control shoes compared with wearing neutral shoes after a 1.5-km run. It has been theorized that motion control shoes can reduce pronation-related injuries, but the evidence supporting the effectiveness of this type of shoe has been controversial, and information regarding the effect of the shoes on plantar force—a useful variable to investigate the shoe-foot interface—is limited.

Who participated in the study?
25 recreational female runners (average age: about 24 years) who reported running for fitness at least once weekly. The runners were divided into 2 groups. Those runners determined to have greater than 6 degrees of pronation during gait formed the group that wore motion control shoes.

What new information does this study offer?
The results of this study suggest that motion control shoes effectively controlled rear-foot motion and resulted in less increase in plantar force after running compared with neutral shoes in a group of recreational runners classified as “overpronators.”

How did the researchers go about this study?
The researchers used a force-sensing insole to detect plantar force across 10 anatomical regions of the foot and a 3-camera motion analysis system to determine kinematic measurements over a 25-step period. Subjects ran for 1.5 km on a treadmill, with measurements of plantar force, kinematic observation, and foot inversion muscle strength taken at the beginning and end of the run.

How might the results of this study apply to physical therapist practice?
In patients with excessive pronation during running, motion control shoes may dampen plantar force, possibly working to prevent pronation-related injuries.

What are the limitations of the study, and what further research is needed?
This study examined only female recreational-level runners over a relatively short distance. In addition, classification of over-pronation based on greater than 6 degrees of pronation motion may be considered arbitrary, as there is no consensus in the available evidence to support this classification. Future studies should investigate the effects of motion control shoes during running over longer distances and among groups of more serious runners.

Eric K Robertson
EK Robertson, PT, DPT, is Assistant Professor, Department of Physical Therapy, Medical College of Georgia.