What problems did the researchers set out to study, and why?
Previous research has demonstrated that normal physiological gait patterns are not restored after hallux valgus surgery. The authors set out to illustrate changes in plantar pressure distribution during the stance phase of gait in individuals who underwent hallux valgus surgery and received a multimodal rehabilitation program.

Who participated in this study?
30 patients with mild to moderate hallux valgus who received surgical repair (either the Austin or scarf procedure) were included in this study. The subjects were required to be free of lower-extremity or spinal problems that could influence gait patterns.

What new information does this study offer?
A multimodal rehabilitation program consisting of manual therapy, therapeutic exercise, and gait training may lead to improved function and weight bearing of the first ray following hallux valgus surgery. This supports the notion that rehabilitation programs after hallux valgus surgery can further improve outcomes for patients.

How did the researchers go about this study?
The researchers used a prospective, descriptive study design. At 4 weeks postsurgery, the subjects received a multimodal rehabilitation program once per week for 4 to 6 weeks. The program included gait training, range-of-motion training, strength training, and joint mobilization. Plantar pressures were collected preoperatively and at 4 weeks, 8 weeks, and 6 months postoperatively. Range of motion of the first metatarsophalangeal joint and measures of function also were recorded.

How might the results be applied to physical therapist practice?
The information in this study provides preliminary evidence in support of routine rehabilitation following hallux valgus surgery to normalize gait and improve function that otherwise may not return on its own. Physical therapists can use the program described in this study as a guide for their own clinical decision making.

What are the limitations of the study, and what further research is needed?
There was no control group in this study, and gait speeds were not recorded during data analysis. Future research should use experimental designs to determine if there is a beneficial effect of a multimodal rehabilitation program on the restoration of physiologic plantar pressure patterns.

Eric K. Robertson
E.K. Robertson, PT, DPT, OCS, is Assistant Professor, Department of Physical Therapy, Texas State University, San Marcos, Texas.

The Bottom Line
The Bottom Line is a translation of study findings for application to clinical practice. It is not intended to substitute for a critical reading of the research article.


Eric K. Robertson
E.K. Robertson, PT, DPT, OCS, is Assistant Professor, Department of Physical Therapy, Texas State University, San Marcos, Texas.