Standing balance deficits are common in individuals after stroke. One way to address these deficits is to provide the individual with feedback from a force platform while balance activities are performed. The feedback can take visual and/or auditory form. Our goal was to determine if visual or auditory force platform feedback improves the clinical and force platform standing balance outcomes in clients with stroke.

Search Strategy
We searched the Cochrane Stroke Group trials register (last searched December 2003) and the following electronic bibliographic databases: the Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 3, 2003), MEDLINE (1966 to May 2003), EMBASE (1974 to May 2003), CINAHL (1982 to May 2003), PEDro (May 2003), CIRRIE (May 2003), and REHABDATA (May 2003). Reference lists of articles were reviewed and manufacturers of equipment were contacted.

Selection Criteria
Randomized controlled trials comparing force platform with visual feedback and/or auditory feedback to other balance treatments were included.

Data Collection and Analysis
Two reviewers independently assessed trials for inclusion, methodological quality, and data extraction. Trials were combined for meta-analysis according to outcome and type of feedback.

Main Results
We included 7 trials (246 participants). Force platform feedback did not improve clinical measures of balance when moving or walking (Berg Balance Scale and Timed Up and Go). Significant improvements in laboratory force platform indicators of stance symmetry were found for regimens using visual feedback (standardized mean difference −0.68; 95% confidence interval, −1.31 to −0.04; P=0.04) and the concurrent visual and auditory feedback (weighted mean difference −4.02; 95% confidence interval, −5.99 to −2.04; P<0.0001). There were no significant effects on laboratory postural sway indicators, clinical outcomes, or measures of function at follow-up assessment.

Implications for Practice
We found no clear evidence that the use of force platform feedback improves clinical standing balance outcomes. However, we did find that force platform feedback training improved stance symmetry, but not sway.

Implications for Research
Our results are based on a small number of trials recruiting a small number of patients. Further larger trials are needed. Further study is also required to investigate the association between laboratory force platform measures of improvement and clinical improvement in balance, gait, and functional outcomes.

Adherence to the CONSORT (Consolidation of Standards for Reporting Trials) guidelines in the rehabilitation literature would make interpreting and reviewing such trials much easier.
easier. Describing stroke severity in relation to outcomes would help to determine if treatment effects are related to stroke severity.

**Reviewers’ Conclusions**

Force platform feedback improved indicators of stance symmetry. The feedback did not affect indicators of sway in standing, clinical balance outcomes, or measures of function.

Note: The full text of this review is available in the Cochrane Library (for subscribers: http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME). The full article should be cited as: Barclay-Goddard R, Stevenson T, Poluha W, Moffatt MEK, Taback SP. Force platform feedback for standing balance training after stroke. *The Cochrane Database of Systematic Reviews*, 2004, Issue 3.
Force Platform Feedback for Standing Balance Training After Stroke
Ruth Barclay-Goddard, Ted Stevenson, William Poluha, Michael E.K. Moffatt and Shayne P. Taback

Stroke. 2005;36:412-413; originally published online January 13, 2005;
doi: 10.1161/01.STR.0000152342.01701.96
Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2005 American Heart Association, Inc. All rights reserved.
Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://stroke.ahajournals.org/content/36/2/412

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Stroke can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Stroke is online at:
http://stroke.ahajournals.org/subscriptions/