

***EFFECT OF SIMULATOR TRAINING ON DRIVING AFTER STROKE:  
A RANDOMIZED CONTROLLED TRIAL***

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**ABSTRACT**

**Summary:** Neurologically impaired persons seem to benefit from driving training programs, but there is no convincing evidence to support this notion. We therefore investigated the effect of simulator-based training on driving after stroke. Eighty-three first ever sub-acute stroke patients entered a 5-week, 15-hour training program in which they were randomly allocated to either an experimental (simulator-based training) or control (driving-related cognitive tasks) group. Performance in off-road evaluations and an on-road test were used to assess the driving ability of subjects pre- and post-training. Outcome of an official pre-driving assessment administered 6 to 9 months post stroke were also considered. Both groups significantly improved in a visual and many neuropsychological evaluations and in the on-road test after training. There were no significant differences between both groups in improvements from pre- to post-training except in the “road sign recognition test,” in which the experimental subjects improved more. Statistically significant improvements in the three-class decision (“fit to drive,” “temporarily unfit to drive” and “unfit to drive”) were found in favor of the experimental group. Academic qualification and overall disability together determined subjects who benefited most from the simulator-based driving training. Significantly more experimental subjects (73%) than controls (42%) passed the follow-up official pre-driving assessment and were legally allowed to resume driving. We concluded that simulator-based driving training was a better method, especially for well educated and less disabled stroke

patients. However, the findings of the study may have been modified as a result of the large number of dropouts and the possibility of some neurological recovery unrelated to training.

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## **Supplier**

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