Improving walking after stroke is one of the main goals of rehabilitation. Treadmill training, with or without body weight support, uses specialist equipment to assist walking practice.

**Objectives**

The objective of this review is to examine the effects of treadmill training and body weight support, individually or in combination for improving walking after stroke.

**Methods**

We searched the Cochrane Stroke Group Trials Register (last searched June 2013), the Cochrane Central Register of Controlled Trials (CENTRAL; The Cochrane Library 2013, Issue 7), MEDLINE (1966 to July 2013), EMBASE (1980 to July 2013), CINAHL (1982 to June 2013), AMED (1985 to July 2013), SPORTDiscus (1949 to July 2013). We also handsearched relevant conference proceedings, searched trials and research registers, checked reference lists, and contacted authors in an effort to identify further published, unpublished, and ongoing trials.

Two review authors independently selected trials for inclusion, assessed methodological quality, and extracted the data.

The primary outcome was the ability to walk independently, walking speed, and endurance.

We included only randomized controlled trials comparing treadmill training with or without body weight support, individually or in combination for improving walking function with other rehabilitation interventions or no treatment.

**Main Results**

We included 44 trials involving 2658 participants in this updated review. Treadmill training with body weight support did not increase the chances of walking independently when compared with other interventions (risk difference, −0.00; 95% confidence interval, −0.02 to 0.02; \(P=0.94; I^2=0\%\)), but treadmill training increased walking velocity and walking endurance significantly. The pooled mean difference (random-effects model) for walking velocity was 0.07 m/s (95% confidence interval, 0.03–0.11; \(P=0.0003; I^2=44\%\); Figure) and the pooled mean difference for walking endurance was 20.08 m (95% confidence interval, 6.14–34.03; \(P=0.005; I^2=35\%\)). Adverse events and drop outs did not occur more frequently in people receiving treadmill training, and these were not judged to be clinically serious events.

**Conclusions**

Patients who receive treadmill training with or without body weight support are not more likely to improve their ability to walk independently when compared with people after stroke not receiving treadmill training, but walking speed and walking endurance may improve.

**Implications for Clinical Practice and Future Research**

Our findings indicate that patients after stroke who are able to walk seem to benefit most from treadmill training. Further research should specifically investigate the effects of different frequencies, durations, or intensities (in terms of speed increments and inclination) of treadmill training, as well as the use of handrails, in ambulatory patients but not in dependent walkers.1

**Disclosures**

Drs Pohl and Mehrholz were authors of 1 included trial (Pohl 2002). They did not participate in quality assessment and data extraction for this study. B. Elsner reports no conflicts.

**Reference**


Key Words: gait ■ rehabilitation ■ stroke ■ walking
Figure. Forest plot of walking speed at the end of intervention phase. CI indicates confidence interval.
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