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A Systematic Review of Repetitive Functional Task Practice with Modeling of Resource Use, Costs and Effectiveness

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Aim

1) To determine if repetitive functional task practice (RFTP) after stroke improves global or limb-specific function or activities of daily living (ADL).
2) To determine if treatment effects are dependent on the amount of practice, or the type or timing of the intervention.
3) To provide estimates of the cost effectiveness of RFTP.

Conclusions and results

Description of studies: Thirty-one studies (1078 participants) were identified. The efficacy of RFTP was considered overall and separately for repetitive task training (RTT), constraint-induced movement therapy (CIMT), and treadmill (TM) training. We found no published trials of either CIMT or TM in the UK, and only 3 RTT trials were UK-based. *RTT:* We found 14 trials: 13 parallel-group randomized controlled trials (RCTs) and one quasi-randomized trial. Four trials had 25 participants or less; six had between 26 and 49 participants; and four had 50 participants or more. *CIMT:* We found 11 trials, all of which were parallel-group RCTs. Ten trials had 25 participants or less, one had 50 participants or more. *TM:* We found six trials: five parallel-group RCTs, and one cross-over trial. Two trials had 25 participants or less, one had between 26 and 49 participants, and three had 50 participants or more.

Study quality: The overall quality of the included trials provided a degree of confidence in the results for RTT and TM training. The results for CIMT must be considered in the light of small sample size. Economic modeling suggested that RFTP was cost effective. Given a threshold for cost effectiveness of 20 000 pounds sterling (GBP) per QALY gained, RFTP is cost effective so long as the net cost per patient is less than GBP 1963.

Recommendations

The evidence suggests that some form of RFTP can be effective in improving lower limb function at any time after stroke, but the duration of intervention effect is unclear. Despite evidence of statistically significant effect for arm function, the evidence is insufficient to draw firm conclusions on upper limb interventions. If task-specific training is used, adverse effects should be monitored. While the effectiveness of RFTP is relatively modest, this sort of intervention appears to be cost effective.

Methods

See Executive Summary link at www.ncchta.org/project/1488.asp.

Further research/reviews required

Further research should: 1) address practical ways to deliver RFTP interventions; 2) evaluate constraint-induced movement therapy for upper limb and hand function; 3) be directed toward evaluating suitable methods to maintain functional gain; 4) include a baseline ADL measure; 5) be powered to detect whether RFTP interventions are cost effective; 6) include indirect costs; and 7) use quality of life as an outcome measure to facilitate economic analysis.

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