THE RELIABILITY OF THE 13-POINT MANUAL MUSCLE TEST IN PEOPLE WITH SPINAL CORD INJURY

INTRODUCTION
Clinical trials are increasingly being conducted to determine the most effective ways to strengthen neurologically weak muscles following spinal cord injury (SCI). The primary outcome measure in these trials is strength measured with dynamometers. However, dynamometers are expensive and not feasible for large multi-centred clinical trials. Therefore, manual muscle testing may be the most pragmatic option. However, the 6-point scale has a restricted range limiting its usefulness in statistical analyses. The 13-point MMT is a modification of the original 6-point scale. This scale fell out of favour in the 1990s due to concerns about its reliability but we could not identify studies, which had formally tested the reliability. Therefore, we felt it was timely to revisit the 13-point MMT for use in clinical trials.

METHODS
We determined the inter-rater reliability of the 13-point MMT for the biceps and wrist extensors of sixty individuals with tetraplegia. Two physiotherapists assessed muscle strength of the biceps and wrist extensors on the same day.

RESULTS
The intraclass correlation coefficients (95% confidence interval) reflecting the agreement between the two strength assessments by the two assessors for the wrist extensors and biceps were 0.98 (0.96 to 0.99) and 0.98 (0.96 to 0.99), respectively. Repeat measurements by different physiotherapists were within 1 point of each other 82% of the time for wrist extensors and 87% of the time for the biceps.

CONCLUSION
The 13-point MMT scale is reliable for use in clinical trials. We have since successfully used this scale as a primary outcome in a large clinical trial.