The Grasp and Release Test (GRT)

Assessment Overview

Assessment Area

ICF Domain:
Activity
Subcategory:
Mobility

You Will Need

Length:
20 minutes, 6 items
Equipment:
Peg**,** paperweight**,** fork**,** block**,** can**,** videotape
Scoring:
Clinician-administered. Subjects are scored on their ability to successfully move each of the objects; the number of successes and failures in 30 seconds is recorded. Item score is the mean number of successes in 5 trials. Total score is the sum of item scores.
The test is done separately on both hands.

Summary

The Grasp and Release Test (GRT) is designed to assess hand neuro-prosthesis in individuals with C5-C6 SCIs, but has also been used to assess hand function prior to and following tendon transfers in people with C6-7 level injuries. It assesses the ability to pick up, move, and release six objects of varying sizes, weights and textures using a palmar or lateral grasp. Each object was chosen to represent one or more objects routinely manipulated for activities of daily living (ADL) that represented a range of difficulties.

Availability

Can be found here.

Languages: English

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Not established in SCI

Measurement Properties

Validity – *Moderate* to **High**

Moderate to *High* **correlation between 12 month Functional Independence Measure (FIM) Scores and:**
Fork = 0.624
Can = 0.700
Videotape = 0.503

Correlation between 12-month FIM and the peg, block, paperweight and total number of objects successfully manipulated were non-significant.

(Mulcahey et al. 2004; n=19, tetraplegia, no information on chronicity)

High **correlation between GRT and Van Lieshout Test:**
Left hand = 0.87
Right hand = 0.90

(Post et al. 2006; n=55, 46 males, tetraplegia, mean time since injury (SD) = 11 (8.5) years)

Number of studies reporting validity data: 3

Reliability – **High**

High **Test-retest Reliability for all 6 items:**
Fork: ICC = 1.00
Paperweight: ICC = 1.00
Videotape: ICC = 1.00
Block: ICC = 0.87
Peg: ICC = 0.93
Can: ICC = 0.99

(Mulcahey et al. 2004; n=19, tetraplegia, no information on chronicity)

Number of studies reporting reliability data: 2

Responsiveness

Floor/Ceiling Effect:
Not established in SCI

Change between baseline and post-rehabilitation GRT scores:
Fork: z=3.05 (P<.01)
Paperweight: z=2.83 (P<.01)
Can: z=2.66 (P<.01)
Total GRT objects manipulated:
z=3.40 (P<.05)

z = Wilcoxon matched pairs signed-rank test

(Mulcahey et al. 2004; n=19, tetraplegia, no information on chronicity)

Number of studies reporting responsiveness data: 1