

Van Lieshout Test – Short Version (VLT-SV)

Assessment Overview

Assessment Area

ICF Domain:

Activity

Subcategory:

Mobility

You Will Need

Length:

25-35 minutes, 10 items

Scoring:

Scored on a 6-point scale, where 0 = task was not possible, and 5 = highest level of accomplishment. A total score may be calculated by summing the scores of all 10 items. Scores take into account the ability to complete a task, and the quality / independence of performance.

Training:

None, but should be administered by skilled therapist.

Summary

Van Lieshout Test – Short Version was developed to assess basic functional modalities of the arm and hand in individuals with cervical SCIs using 10 tasks, which covers positioning and stabilization of the arms, opening and closing of the functional hand, grasping and releasing of the hands, and manipulation of the thumbs and fingers.

The VLT-SV was developed with the cervical SCI population in mind. Tasks include 1) arch task, 2) forward reaching, 3) thumb opening, 4) finger opening, 5) grasp function of the thumb, 6) thumb strength, 7) finger strength, 8) pen grip, 9) opening a bottle, and 10) lighting a match. During administration of the test, the patient and clinician together identify the best way to complete the task.

Availability

Available for free here: http://www.scireproject.com/wp-content/uploads/worksheet_vltvlt-sv.docx **Languages:** English, German, Dutch

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Sum of the Means of all 10 VLT Scores:

Left hand = 27.9

Right hand = 34.0

(Post et al. 2006, study 2; N=55, 46 male, tetraplegia, mean time since injury (SD) = 11.0 (8.5) years)

Measurement Properties

Validity – **Moderate** to **High**

High correlation with Grasp and Release Test (GRT):

$r = 0.87$ (left hand) - 0.90 (right hand)

High correlation with Functional Independence Measure (FIM) – Transfer:

$r = 0.71$ (L) - 0.72 (R)

High correlation with Functional Independence Measure (FIM) – Self Care:

$r = 0.61$ (L) - 0.69 (R)

Moderate to **High** correlation with ASIA Impairment Scale (AIS):

$r = 0.35$ (L) - 0.69 (R)

(Post et al. 2006, study 2; N=55, 46 male, tetraplegia, mean time since injury (SD) = 11.0 (8.5) years)

Number of studies reporting validity data: 4

Reliability – **High**

High Inter-rater Reliability:

ICC = 0.98-0.99

(Post et al. 2006, study 1; N=12, 9 male, tetraplegia, mean time since injury (SD) = 13.0 (11.2) years)

High Internal Consistency:

$\alpha = 0.88-0.95$

(Post et al. 2006, study 2; N=55, 46 male, tetraplegia, mean time since injury (SD) = 11.0 (8.5) years)

(Berardi et al. 2019, N=61, 80.3% Male, mean age: 47 ± 14.76 years, AIS: 25A, 15B, 15C, 6D)

High Test-retest reliability (Italian version):

ICC = 0.90

(Berardi et al. 2019, N=61, 80.3% Male, mean age: 47 ± 14.76 years, AIS: 25A, 15B, 15C, 6D)

Number of studies reporting reliability data: 2

Responsiveness

Floor/Ceiling Effect:

Not established in SCI

Effect Size:

Admission to discharge = 1.1

Admission to 3-months post-admission = 0.95

3-months post-admission to discharge = 0.67

(Spooren et al. 2006; N=60, 46 male, incomplete tetraplegia, acute SCI, mean time between admission and discharge=288 days)

Number of studies reporting

responsiveness data: 2