

### **Grasp and Release Test (GRT)**

Adapted from Wuolle KS et al. Development of a Quantitative Hand Grasp and Release Test for Patients With Tetraplegia Using a Hand Neuroprosthesis, Journal of Hand Surgery, 19 (2): 209-218, 1994; Materials and Methods

This test is a variant of earlier "pick and place" tests but objects, test structure and scoring methods are tailored to the tetraplegic population.

This test consists of the manipulation of 6 objects, 3 with lateral prehension (peg, paperweight and fork) and 3 with palmar prehension (block, can and videotape).

#### **Procedure:**

Before the test begins, a pretest for each object is administered to familiarize the subject with the instructions for each test. The patients are given at least 30 seconds of practice with each object.

For all the objects, the sequences below are repeated as many times as possible in 30 seconds.

For the block and peg, the object was grasped in the starting area of the test board, lifted, and moved over a barrier and released (dropped) in the target area.

For the can, paperweight and videotape, the same procedure as above applies but the object had to be placed upright on the target area when released.

For the fork, the patient started with the hand at the lateral edge of the test board. They are then instructed to move their hand to the fork, grasp the handle and depress the piston past the indicator line. They then release the handle and place their hand back in the starting position.

#### **Scoring:**

Scored by mean # of successful completions and mean # of failures performed in 30 seconds, for each object over several trials (3-5 trials reported).

A summed completion score is calculated by adding the mean item completion scores. If a subject fails to move an item, they score zero for that particular item. If a subject moves the item N times, the score is N. Single item scores may be reported.

Grasp and Release Test Worksheet:

Patient Name: \_\_\_\_\_

Date: \_\_\_\_\_

For each of the following tasks, indicate whether there is successful completion of the task, and if yes, indicate the number of times the task was performed in 30 seconds.

Scored by mean # of successful completions and # of failures performed in 30 seconds, for each object. 3-5 trials should be completed.

Under each trial, indicate the # of completions (C) and failures (F).

Hand: \_\_\_\_\_

Date: \_\_\_\_\_

	Trials									
	1		2		3		4		5	
	C	F	C	F	C	F	C	F	C	F
Peg										
Weight										
Fork										
Block										
Can										
Tape										

Total Score: \_\_\_\_\_

Hand: \_\_\_\_\_

Date: \_\_\_\_\_

	Trials									
	1		2		3		4		5	
	C	F	C	F	C	F	C	F	C	F
Peg										
Weight										
Fork										
Block										
Can										
Tape										

Total Score: \_\_\_\_\_