

## **4 Functional Tests for Persons who Self-Propel a Manual Wheelchair (4FTPSPMW)**

Adapted from May et al. 2003. Measurement reliability of functional tasks for persons who self-propel a manual wheelchair, Archives of Physical Medicine and Rehabilitation, 84 (4): 578-83, 2003; 4 paragraphs under Methods (timed forward wheeling, forward vertical reach, ramp ascent, one-stroke push) with permission from Elsevier Publishing.

This test consists of 4 functional tests: Timed Forward Wheeling, Forward Vertical Reach, Ramp Ascent and One-Stroke Push.

### **Timed Forward Wheeling**

1. Start the subject from a stationary position (anterior edges of front castors positioned directly behind start line).
2. Instruct the subject to start wheeling on "go" and stop when they have passed a line marked 23 metres away from the start line.
3. Measure the duration of time it takes the subject to wheel 23 m, starting from the first movement of the castors and stopping when the rear wheels completely cross the line.

### **Forward Vertical Reach**

*Equipment:* 1 meter measuring stick with felt pen attached to one end and a carpenter's level secured in the middle

1. Position the subject's wheelchair parallel to a marking board and instruct the to hold a measuring stick with both hands (palms facing down), and keep their forearms parallel to their thighs.
2. Position the tip of the felt pen within 1 inch of the marking board.
3. Instruct the subject to raise the measuring stick upward, but to keep the stick level and to avoid excessive backward arching.
4. Mark the marking board at the highest point reached.
5. Record the distance from the floor to the point reached.

### **Ramp Ascent (forward wheeling)**

*Equipment:* Ramp (10.3m in length, 1:13 grade)

1. The subject begins wheeling 4.5 m from the base of the ramp and is instructed to wheel up the entire ramp until they reach the top flat surface.
2. If the subject is unable to complete the ramp without stopping, a maximum rest period of 30 seconds is allowed.
3. As many rest periods as necessary can be taken, so long as independent forward propulsion is resumed before the 30 second rest time is over.
4. Time the duration it takes the subject (including rest time) to get from the base of the ramp to the top of the ramp to the nearest second.

### **One-Stroke Push**

1. Position the subject's wheelchair with all 4 wheels on a carpeted surface.
2. Instruct the subject to propel the wheelchair forward by pushing **once** with maximal effort.

3. Measure the distance from the most posterior point of the rear wheels as a starting point to the most posterior point of the rear wheels when the wheelchair has rolled to a complete stop.

4FTPSPMW Worksheet:

Patient name: \_\_\_\_\_

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

Timed Forward Wheeling: \_\_\_\_\_ seconds

Forward Vertical Reach: \_\_\_\_\_ cm

Ramp Ascent: \_\_\_\_\_ seconds

One-Stroke Push: \_\_\_\_\_ cm