

# **PRACTICAL INTRODUCTION TO TRAINING WHEELCHAIR SKILLS TO MANUAL WHEELCHAIR USERS**

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## **Abstract**

Research evidence has been accumulating that demonstrates the safety and superior efficacy of a formal approach to wheelchair skills training of wheelchair users and their caregivers. The Wheelchair Skills Program (WSP), available free on the Internet ([www.wheelchairskillsprogram.ca](http://www.wheelchairskillsprogram.ca)), includes useful evaluation and training tools to help practitioners translate this research evidence into clinical practice. In the past year the group has moved to the new WSP Version 4.1. The WSP consists of the Wheelchair Skills Test (WST) and the Wheelchair Skills Training Program (WSTP). The WSP is based on motor-learning literature and the WST has been found to be reliable and valid. The WSP is designed for the testing and training of manual and power wheelchair users as well as caregivers.

This Workshop includes a Power Point introduction to the Wheelchair Skills Program, its principles, the current body of the evidence and recent improvements to the Program. The practical portion will provide participants with an opportunity to test and train each other in a range of caregiver and manual wheelchair user skills. On completion of the session, attendees will better understand how the WSP may be implemented in their own settings.

## **Learning Objectives**

On completion of the session, attendees will be able to describe:

- 1) the research evidence supporting the safety and efficacy of wheelchair skills training
- 2) the motor-learning principles underlying successful wheelchair skills training
- 3) the practical steps involved in conducting wheelchair skills training

## **Research Evidence**

The measurement properties of the WST have been documented.<sup>1,2</sup> In these studies, the WST was found to be safe, practical, reliable, valid and useful.<sup>3</sup> The WST has been used as a screening or outcome measure in a number of studies. Further study is needed to evaluate the measurement properties of the WST as it evolves, and in different settings.<sup>4</sup>

The relationships between the objective WST and the questionnaire version of the WST (WST-Q) have also been reported.<sup>5,6</sup> The correlations between the total WST and WST-Q scores were found to be excellent, although the WST-Q scores were slightly higher.

Regarding the Wheelchair Skills Training Program (WSTP), we have completed two randomized controlled trials on wheelchair users, one on wheelchair users admitted for initial rehabilitation<sup>7</sup> and one on wheelchair users in the community.<sup>8</sup> In both, we found that the WSTP was safe, practical and resulted in significantly greater improvements (2-3 fold) in wheelchair skills performance than standard care. In a third randomized controlled trial, on occupational therapy students, we found that the WSTP resulted in significantly greater improvement (2-3 fold) in wheelchair skills than a standard undergraduate occupational therapy curriculum<sup>9</sup> and that these skills were retained 9-12 months later.<sup>10</sup> Finally, in a pilot study in a rehabilitation centre,<sup>11</sup> we provided less than 50 minutes of training on wheelchair-handling skills to caregivers of wheelchair users. We found that the WSTP was an effective way to improve caregiver skills and that these skills were retained. Currently a training study is underway in a long-term-care setting and studies focusing on optimizing training of specific skills are ongoing. Studies of the safety and effectiveness of the WSTP in other settings are planned.

### **Motor-Learning Principles**

There is growing interest in motor-learning literature with a new level of attention being given to the area of rehabilitation. There are many techniques that may be used to facilitate the learning of motor skills such as wheelchair skills. Listed are some of the techniques that will be discussed during the workshop:

- Use brief training sessions
- Use a high ratio of trainers to learners
- Use a partner of comparable skill level
- Demonstrate the skills
- Segment complex skills
- Identify limiting factors
- Provide feedback correctly
- Choose an appropriate focus of attention
- Use learning exercises
- Facilitate consolidation
- Ensure retention

Please review the online WSP manual for further information on how to use these learning techniques.

### **Practical Component**

A handout will be provided at the session to help guide participants through the workshop and to act as a resource for training wheelchair-using clients and caregivers. The small group format will allow participants to comment and ask questions throughout the workshop. The opportunity to practice the skills while simulating paraplegia and hemiplegia introduces attendees to the basic training elements of wheelchair skills.

### **References**

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### **Speaker Bios**

Cher Smith and Carolyn Kelly are occupational therapists working in the Specialty Seating and Mobility Service at the Nova Scotia Rehabilitation Centre in Halifax. Carolyn works full-time with clients with complex seating needs and Cher Smith divides her time between clients and wheelchair research with the Dalhousie Wheelchair Research Team. They believe that everyone should love what they do and do what they love.