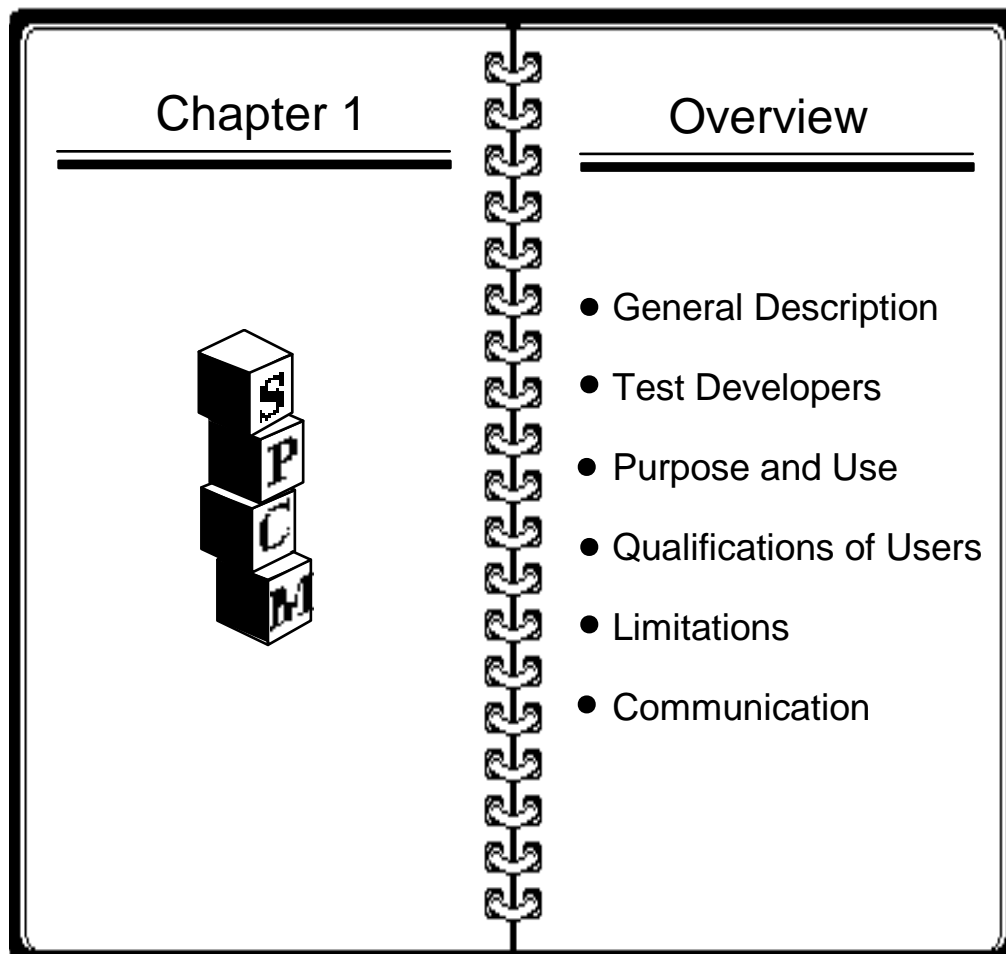


## Chapter 1: Overview



### General Description

The research version of the Seated Postural Control Measure (SPCM) has been constructed and is being tested as an outcome measure to evaluate change in postural control as a result of adaptive seating intervention. It was designed as a clinical evaluation tool to measure sitting behaviors which are thought to change as a result of adaptive seating intervention. The two domains of sitting behaviors measured are: (1) static postural alignment; and, (2) functional movement.

The Alignment Section consists of 22 graphically depicted items which measure the alignment of each body segment. Palpation and visual observation are used to determine the extent of angular deviation of each segment from a pre-defined neutral position. Neutral alignment as well as mild, moderate, and severe angular deviations have been operationally defined to provide an ordinal four-point scale for item scoring.

The Function Section is comprised of 12 functional movement items which examine the achievement of seated functions such as head and trunk control, reach, grasp and release, bimanual manipulation, and wheelchair management. Function Section items are scored using an ordinal scale consisting of four criterion-referenced levels. Each subsequent level of the scale represents increasing task achievement.

The complete research version of the SPCM thus consists of 34 items which can be administered in a clinical setting in 30 minutes or less.

## **Test Developers**

Initial identification of the need for a seating outcome measure arose from discussion amongst clinical staff of the Positioning Assessment Unit at Sunny Hill Health Centre for Children. Clinicians were frustrated in their attempts to evaluate the outcome of adaptive seating interventions by the lack of available measurement tools. Numerous potential seating outcomes were identified through literature review and clinical practice and thus the task of identifying or developing instruments to measure these outcomes was subdivided and sequenced as part of a long-term research plan. The short-term outcome of improved seated postural control was the first outcome addressed. Because no standardized, clinically feasible instruments existed for measuring this outcome, test development was undertaken. Test design criteria were formulated by the Positioning Assessment Unit staff and a project team was assembled to develop the the Research Version of the Seated Postural Control Measure. The project team of clinicians and researchers, whose efforts were coordinated through the Therapy Department of Sunny Hill Health Centre for Children, included:

- ◆ Sue Fife, MSc, PT - project coordinator and research therapist at Sunny Hill Health Centre.
- ◆ Lori Roxborough, BSR, OT/PT - a clinician in the Positioning Assessment Unit and a clinical instructor in the School of Rehabilitation Sciences at the University of British Columbia.
- ◆ Maureen Story, BSR, OT/PT - a clinician in the Positioning Assessment Unit at Sunny Hill Health Centre and a private practitioner with Access Community Therapists.
- ◆ Robert Armstrong, MD, PhD, FRCP(c) - the medical director of Sunny Hill Health Centre and Associate Professor in the Division of Developmental Pediatrics,

Department of Pediatrics, at the University of British Columbia.

◆ Debbie Field, BSc, OT - was a clinician in the Positioning Assessment Unit and Assistive Devices service at Sunny Hill Health Centre during test construction and reliability testing.

◆ Janice Gregson, BSc, PT - was a clinician in the Positioning Assessment Unit at Sunny Hill Health Centre during test construction and the first phase of reliability testing.

### **Purpose and Uses**

The purpose of developing the Seated Postural Control Measure is to produce an evaluative instrument which can accurately measure change in seated postural control as a result of adaptive seating intervention. It is being developed to measure changes in seated postural control in children with a wide range of neuromotor conditions affecting their ability to sit independently. The SPCM is designed for use by occupational therapists and physiotherapists who are experienced in assessing children's sitting abilities and in prescribing adaptive seating systems. When validated, it is hoped that this measure will assist therapists in the selection of seating interventions for individual children by providing a means of evaluating the effectiveness of each of the potential seating options. A second purpose of measure development is to provide a standard method of documenting changes in postural control which may facilitate communication between therapists and between clinics. A third potential purpose of the measure is to assist in answering research questions regarding the appropriate timing of seating intervention, and the relative effectiveness of a range of seating options for specific populations. Finally, if

validated, this evaluative seating measure may provide a means of collecting outcome data for seating clinic program evaluation and quality assurance activities.

This research version of the SPCM has not yet been fully validated as an evaluative measure as the responsiveness of the measure (i.e. the capacity to detect clinically significant change) has not yet been determined.

**Information required to interpret the meaning of changes in SPCM scores between measurement sessions is not available and thus the measure is not ready for use in clinical practice.**

At this time, the SPCM is being made available and recommended for use only by researchers who wish to further explore its measurement properties. It is hoped that investigators planning to engage in SPCM measurement research will adhere to professional standards for conducting measurement research such as those itemized for secondary test purveyors by the Task Force on Standards for Measurement in Physical Therapy of the American Physical Therapy Association (1991).

### **Qualifications of Test Users**

The SPCM is designed for use by pediatric therapists who have experience in assessing the adaptive seating needs of children with neuromotor disabilities. Although the minimum amount of training required to correctly administer the measure has not yet been determined, occupational therapists and physiotherapists with three to six years' seating experience achieved 80 percent agreement with an instructor following a demonstration of SPCM administration and independent practice on ten

children with neuromotor disabilities. The written guidelines, test materials, and scoring forms described in this manual were used for the demonstration and practice sessions as well as for subsequent reliability testing.

Until the precise amount of user training is known, it is suggested that test users attend a training session with the test developers, thoroughly familiarize themselves with this administration and scoring manual and practice administering the items on ten children with varying degrees of motor involvement. Verifying practice findings with a second administrator is also suggested. Test users should also be familiar with measurement theory related to the use of evaluative measures (e.g., Guyatt, Walter & Norman, 1987; Kirshner & Guyatt, 1985; Rosenbaum et al., 1990) and the analysis of ordinal scale data (e.g., Crocker & Algina, 1986).

### **Limitations**


This measure is being developed for use as a clinical evaluation tool for occupational therapists and physiotherapists who routinely assess children with neuromotor disabilities and prescribe adaptive seating systems. All testing to date has involved administration of the measure by occupational therapists and physiotherapists and subjects tested have been children. The SPCM has not been evaluated for use with adult clients and it is thus not known whether it can be reliably administered to this age group. Because validity testing is incomplete, it has not yet been determined whether the SPCM is capable of detecting true change in postural control as a result of adaptive seating intervention. It is only known that the measure can be reliably administered by experienced occupational therapists and


physiotherapists who have been trained to administer and score the items.

### **Communication with Test Developers**

Developers of the SPCM are very interested in communicating with individuals or groups who are involved in developing measurement tools or conducting outcome research in the area of adaptive seating. The formation of a network of clients, clinicians, researchers, educators and seating equipment manufacturers with a common interest in the measurement of adaptive seating outcomes would contribute substantially to the advancement of knowledge in this area through a sharing of ideas and experiences. Anyone who is interested in conducting further research with the SPCM or who wishes to provide feedback on the measure is enthusiastically encouraged to contact the SPCM Project Team through:

 **Contacts:** Lori Roxborough or Sue Fife

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Sunny Hill Health Centre for Children  
3644 Slocan Street  
Vancouver, British Columbia  
Canada, V5M 3E8

 **Telephone:** (604) 453-6502

 **Fax:** (604) 434-2729

**/Internet:** [lroxborough@cw.bc.ca](mailto:lroxborough@cw.bc.ca)