# Reliability and Validity of the Segmental Assessment of Trunk Control (SATCo) in Adults with Neurologic Conditions

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## OBJECTIVE

The objective of this study is to assess the reliability and validity of the SATCo in adult neurologic populations to address the need for more specific trunk control measures for adults with deficits in postural control.
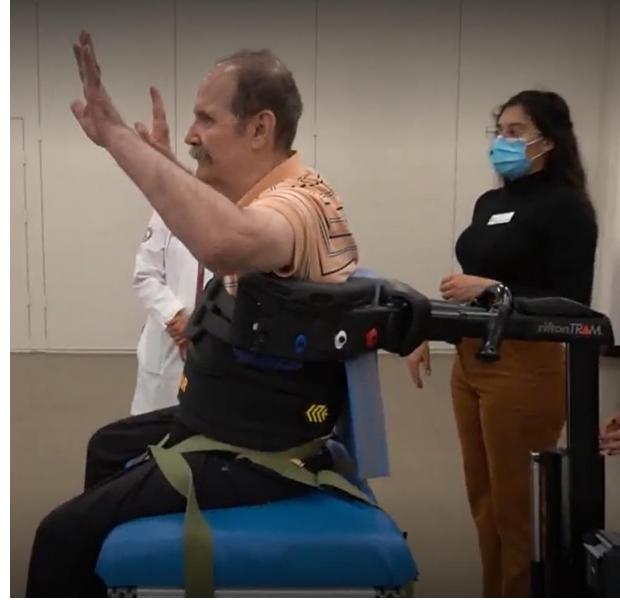
## INTRODUCTION

SATCo has been shown to be reliable and valid across several pediatric neurologic diagnoses, as well as during typical development. The SATCo is the only current measure that determines control at discrete levels of the trunk.  As it has currently only been validated in pediatric populations, the adult neurologic population is currently without a sufficient means of assessing postural control for individuals who lack the ability to sit independently.  The current validated measures of trunk control for adult populations encounter a common issue of floor effects for individuals with partial trunk control, meaning these individuals often score the lowest possible scores on these measures and thus are unable to accurately determine the extent of postural control these patients may have. This has negative implications for their functional independence and rehabilitation potential.  There is a need to establish valid and reliable outcome measures that meet the specific needs of adults with deficits in postural control.
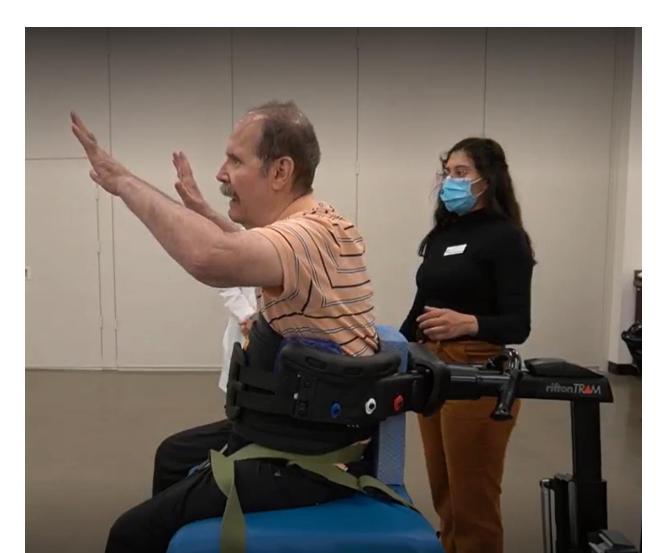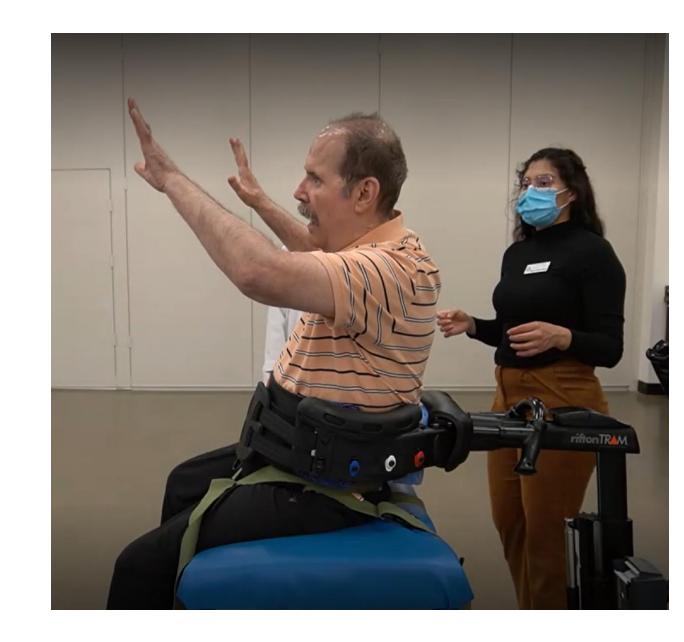
## KEY EQUIPMENT USED

Rifton TRAM

SATCo bench (Seat:20 inches x39.5 inches x3.75 inches; Heit: 24 inches)
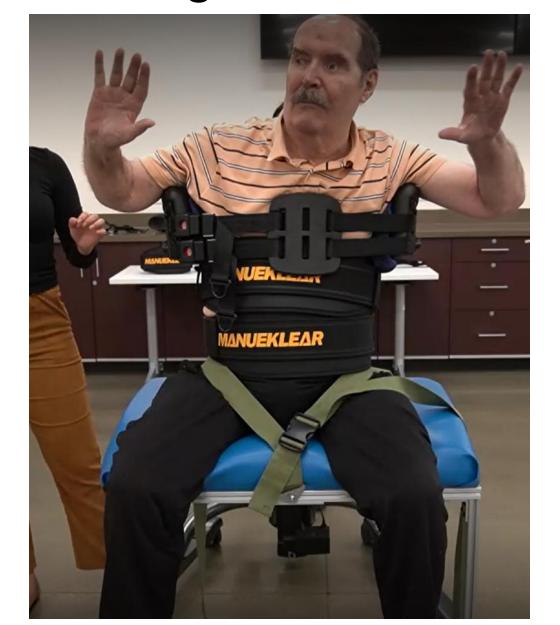
MANEUKLEAR Weightlifting belts

## DATA COLLECTION

Prior to scoring SATCO exams of the participants, students were required to score ≥ ICC 0.70 on all three categories: static, dynamic, and reactive to maintain reliability within the scorers. With the data collected from the  participants, the upcoming plan is to score live vs video to ensure inter-rater, intra-rater, and test-retest reliability. Based on the data collected thus far, a floor effect was found for many UE outcome measures which also aligns with SATCO findings.



## STUDY DESIGN

In this prospective cross-sectional study, data will be collected within 3 sessions. Data will be collected from 20 adults with neurologic deficits.

In order to establish the validity of using the SATCo, it will be compared to three other trunk assessments:
-   Trunk Impairment Scale (TIS)
-   Modified Functional Reach Test (MFRT), Trunk Recovery Scale (TRS)
-   Trunk Control Test (TCT) to establish validity of the SATCo in adults.

To assess the effects of segmental support, upper extremity function is measured with:
-   Jebsen-Taylor Hand Functional Test (JTHFT)
-   Box and Blocks Test (BBT)
-   Chedoke Arm and Hand Activity Inventory (CAHAI-7).

The tests are assessed with and without segmental support provided at their SATCo level.

## CONCLUSION

The limited data collected currently is insufficient to develop any conclusions about the validity of the SATCo for adults with neurological disorders or the effects of segmental support on upper extremity function. Additional data collection and a comparison of live scoring and video scoring must be performed to provide a better understanding of the reliability and validity of the SATCo for adults.

## ACKNOWLEDGMENTS

Rifton Adaptive Equipment