

# Relationship Among Measures of Self-Efficacy, Participation, Physical Function, & Real World Physical Activity in Chronic Stroke

## Background Information

### Definitions

- PROMIS® = Patient- Reported Outcomes Measurement Information System. PROMIS® is a set of person-centered measures that evaluates and monitors physical, mental, and social health through both computer adaptive testing and traditional "paper and pencil" instruments.
- Chronic Stroke = onset  $\geq$  3 months
- Active Time = upright time (total standing time + total stepping time) + cycling time
- Sedentary time = sitting time + seated transport time + primary lying time + secondary lying time
- Activity Index = active time / sedentary time

## What We Know

Self- efficacy is a key determinant of behavior, exercise participation, and "real world" physical activity. (Ellis, 2011; Schmid, 2012)

Treatments targeting self-efficacy can improve activity in patients with chronic stroke. (Danks, 2016; Pang, 2007)

Current measures of self-efficacy (patient reported):

- Pen and paper: ABC, FES-I
- CAT/Short form: PROMIS® (Managing Daily Activities)

## Research Question

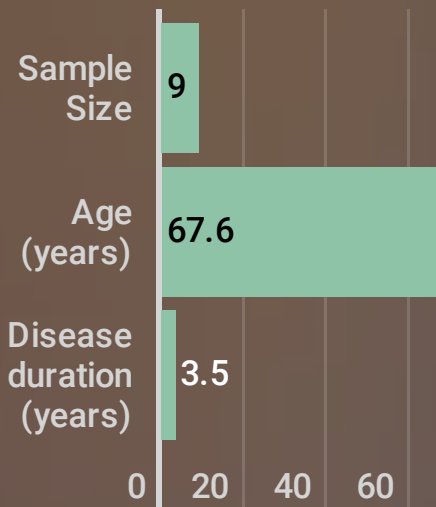
Do PROMIS® measures correlate significantly enough with traditional measures of self-efficacy, physical performance, and real-world physical activity in a chronic stroke population to justify replacing their use in clinic?

## Hypothesis

PROMIS® measures will demonstrate significant correlations with a variety of traditional measures and real world activity, which may allow us to use PROMIS® as a primary method of directing treatment interventions in those with chronic stroke.

## Methods

### Subjects



### Physical Performance Outcome Measures

- 10 meter walk test (gait speed)
- Timed-Up-and-Go (TUG)
- Brief BESTest

### Patient-Reported Outcome Measures

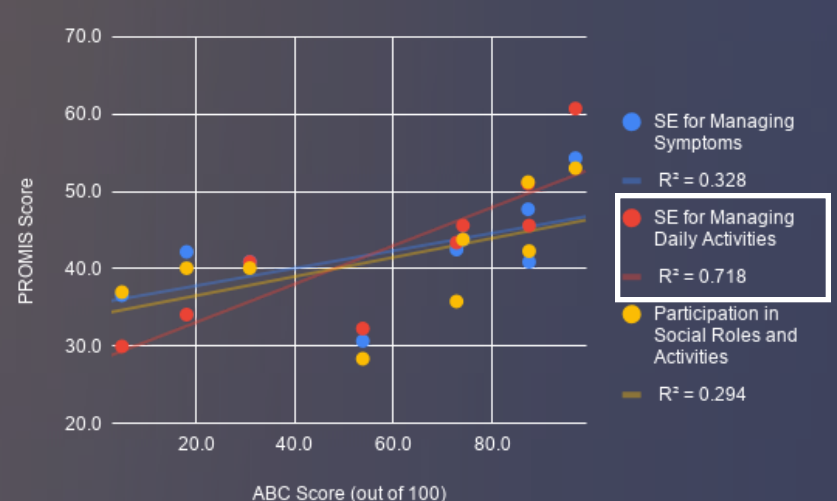
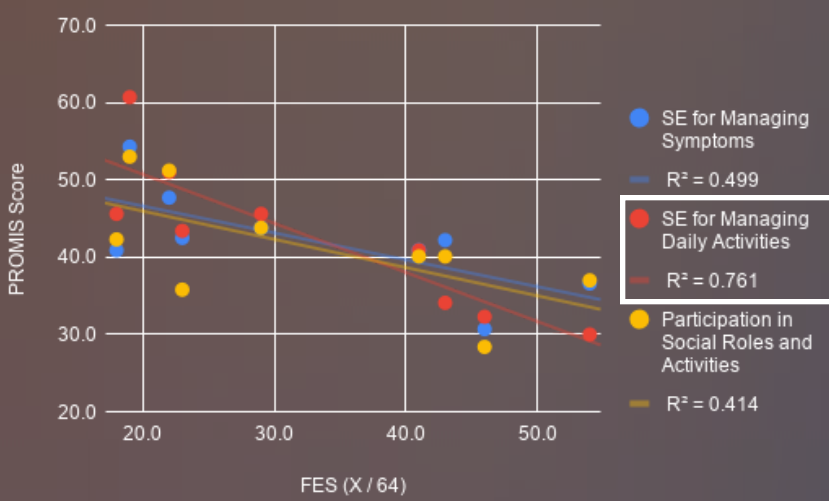
- PROMIS® Physical Function, Depression, Fatigue, Social Roles and Activities, Managing Symptoms, Managing Daily Activities
- Falls Efficacy Scale - International (FES-I)
- Activities-Specific Balance Confidence Scale (ABC)

### ActivePal Activity Monitors

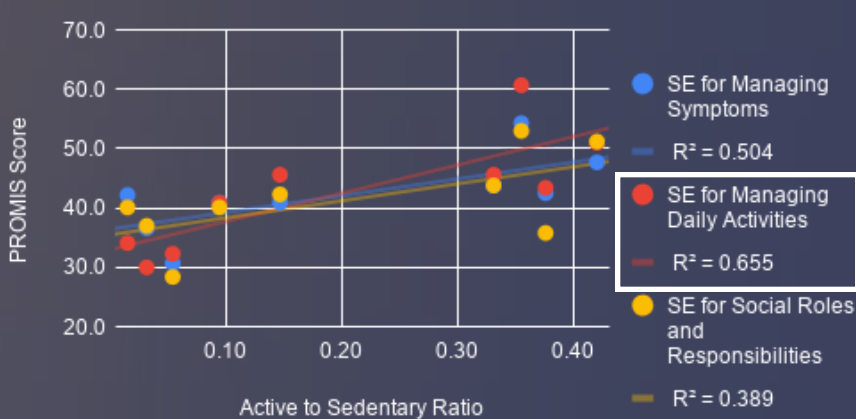
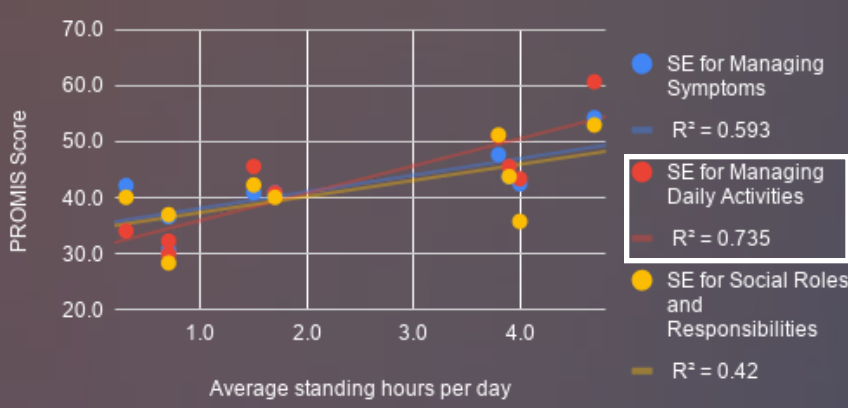
- Applied to midline of anterior thigh
- Recorded data 24 hrs/day for 7 consecutive days
- Devices removed and data uploaded to ActivePal software for analysis

## Results

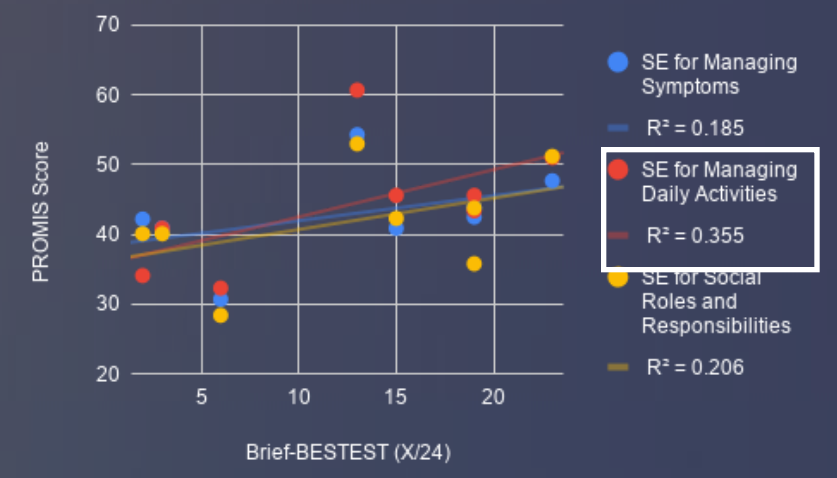
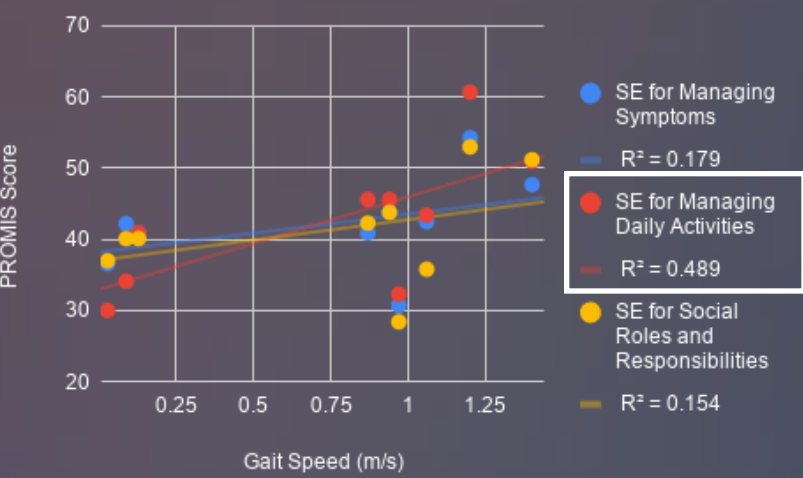
### PROMIS® Managing Daily Activities vs. Self Reports (ABC, FES-I)



### PROMIS® Managing Daily Activities vs. Real World Activity (ActivePal)



### PROMIS® Managing Daily Activities vs. Physical Performance Measures (10-Meter Walk, Brief-BEST)



The PROMIS® short form "Self-Efficacy for Managing Daily Activities" showed:

- Strong correlations ( $R^2 > 0.7$ ) with an individual's FES-I and ABC scores, as well as standing hours per day.
- A moderate correlation ( $R^2 > 0.5$ ) with the ratio of active to sedentary time.
- Weak, positive correlations ( $R^2 > 0.3$ ) with the 10 Meter Walk Test and the Brief BESTest

## Conclusion

- Physical Therapists should continue to use physical performance measures in the clinic to understand their patient's physical abilities
- The PROMIS® short form "Self-efficacy for Managing Daily Activities" is a valid measure that can be used among patients with chronic stroke to accurately predict their "real world" physical activity level and their self-efficacy related to falls and balance
- This information can be used to promote health and wellness among the chronic stroke population by targeting self-efficacy in order to improve physical activity levels