Focus has remained on single input access methods despite advances in access technologies (eye/head tracking, touch interfaces, specialty switches). Opportunities exist to improve access for individuals with severe physical impairments that experience single input access challenges.

Challenges with single input access:
- Fatigue due to over-use
- Inefficiency
- Heavy reliance/focus on methods such as dwell that require vigilance and precise motor execution
- Some access methods require optimal set-up, positioning and environmental conditions to be relied on exclusively as an access method

Research Question: Is there a difference in performance (accuracy of letter selection/errors) using a multi-input prototype (eye-tracking + switch scanning) and eye-tracking only?

Equipment
- Multi-input access prototype
  - Surface pro with Tobii PCEye mini and jellybean switch, onscreen keyboard interface
  - Tobii I12 with switch-selected letter access

Procedures
- AB design random assignment to multi-input prototype or Tobii I12
- Sentence task

Data Collection
- First attempt accuracy
- First attempt at target letter
- Errors
  - Number of errors (inaccurate letter selection, unable to select letter)

Discussion
- Eye tracking alone when assessed clinically, was not sufficiently accurate to support communication early in recovery which left her with switch scanning as her only viable access method
- Challenges: fatigue with high number of switch selections required during communication
- Multi-input prototype allowed her to reduce over-reliance on switch scanning and allowed her to leverage a more direct access method (eye-tracking) early in recovery
- Potential for tool to be used during the day when fatigue made switch scanning difficult
- Potential to bridge the gap between switch scanning and eye-tracking access (as eye motor control improved)
- Anecdotal reports from staff excited about potential to use multi-input to encourage eye motor control through meaningful task (communication)