

Differences in Motor Learning Between Children with Cerebral Palsy and Typically Developing Peers Using a Dynamic Balance Task

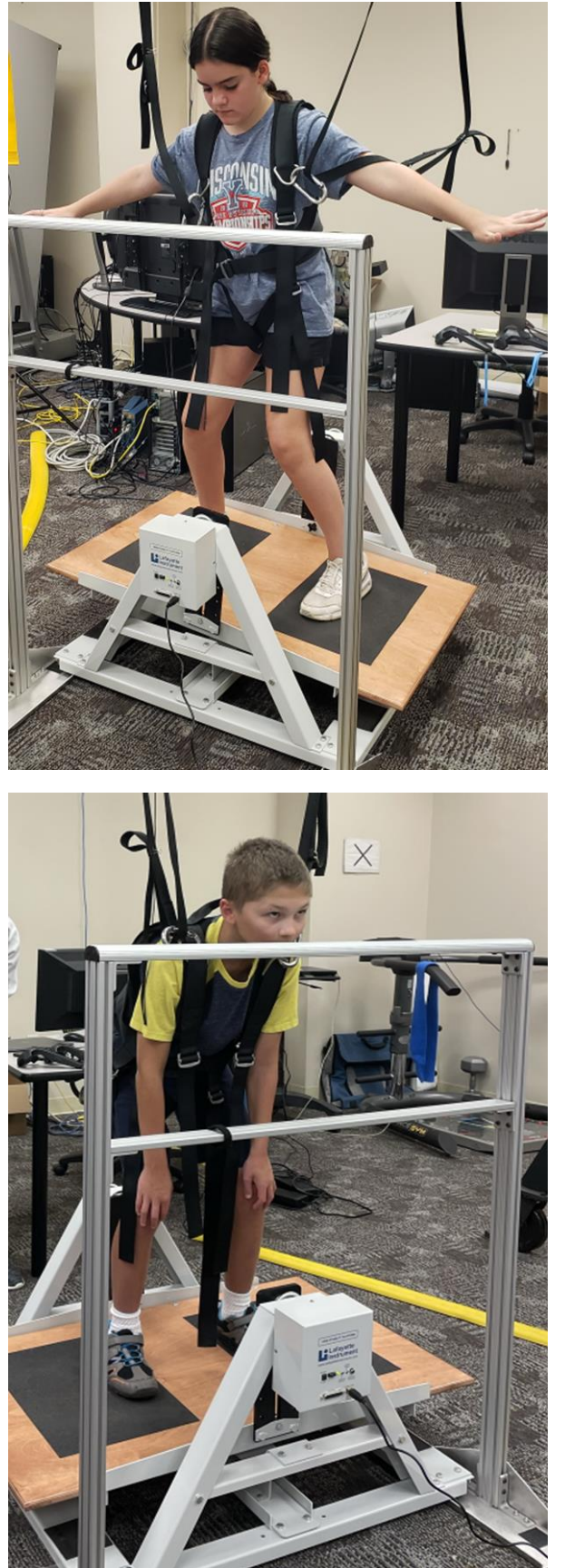
PRESENTER:
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- BACKGROUND:**
- Cerebral palsy (CP) is the leading cause of physical disability in children.
 - Learning/improving motor skills are primary goals of therapeutic intervention in children with CP.
 - Despite many existing interventions, more data is needed to understand motor learning in children with CP—especially compared to their typically developing peers.
 - This data is vital in determining optimal therapeutic dose.

- OBJECTIVE**
- Compare motor learning and performance variability between children with CP and typically developing (TD) children, using 5 days of dynamic balance training

- HYPOTHESIS**
- Children with CP and TD children will show differing patterns of motor learning.
 - Children with CP will show greater variability in motor learning compared to TD children, but variability will reduce with training.

- METHODS**
- 6 TD children (mean age: 11)
 - 16 children w/ CP (mean age: 12)
 - **Task:** Balance on stability platform, keep platform within 5° of horizontal.



Kids with **Cerebral Palsy** show signs of motor learning after 5 days of balance training, but they have lower post-training performance than **typically developing** kids.

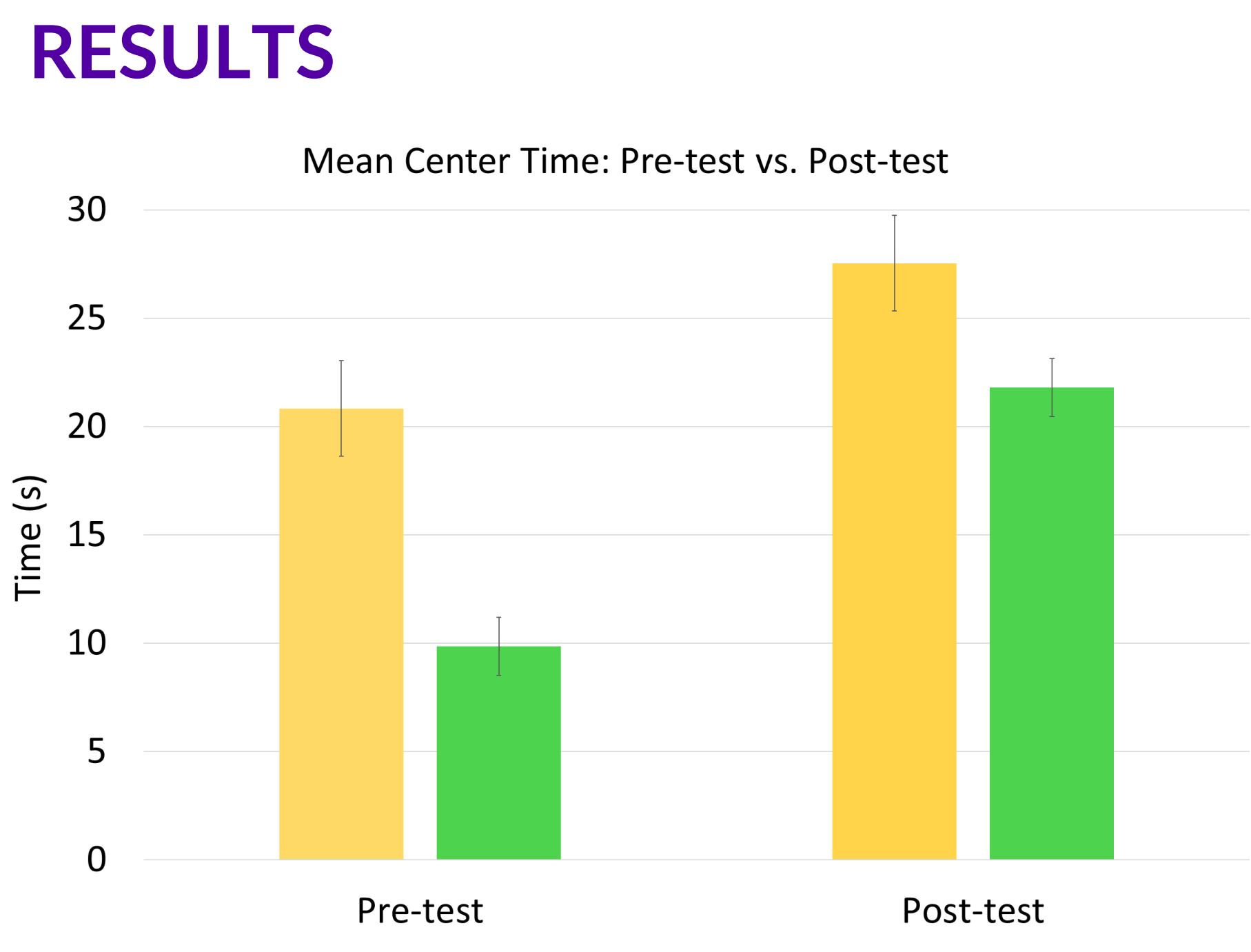
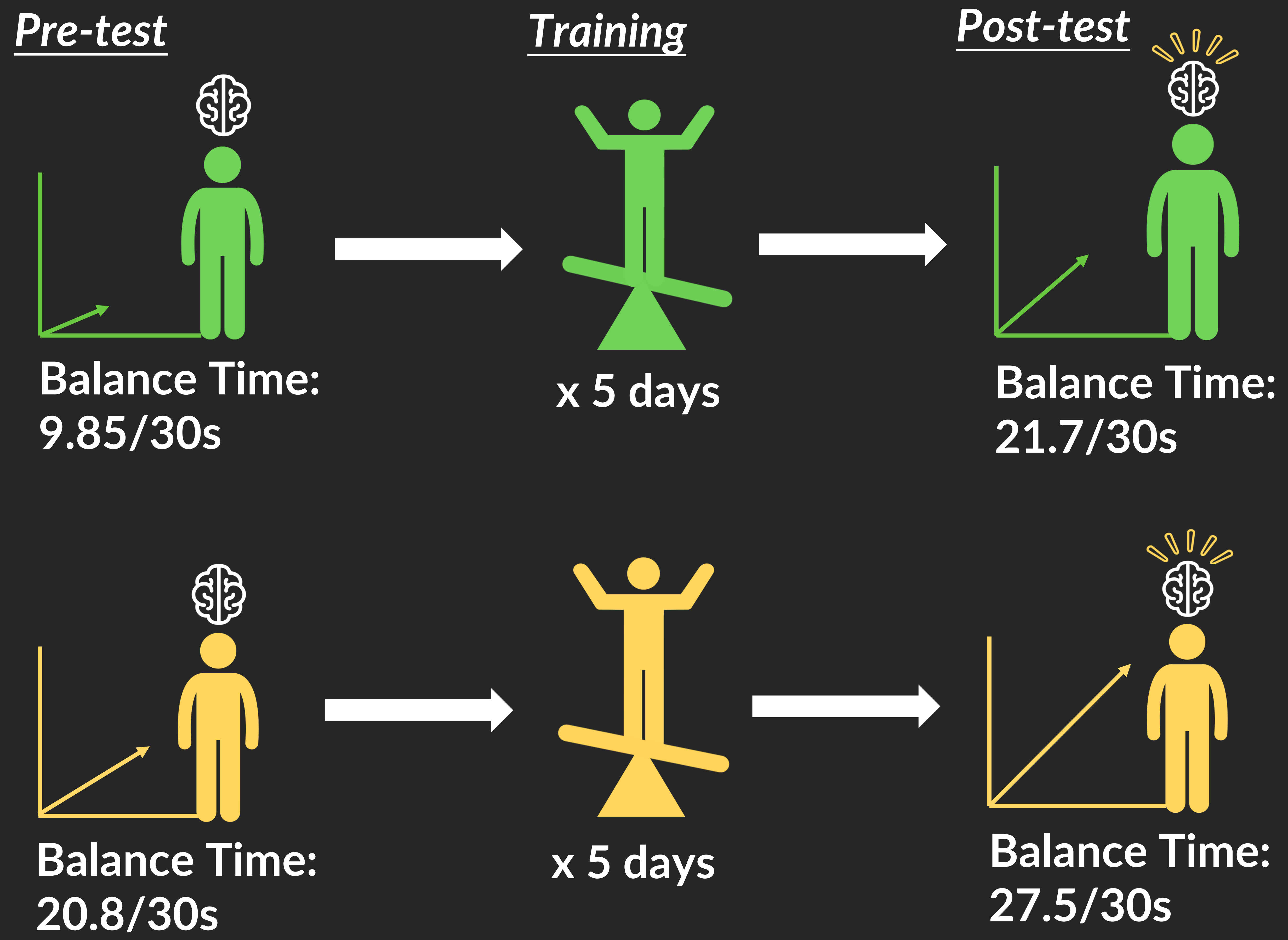


Fig. 1: Both groups show motor learning after five days of balance training.

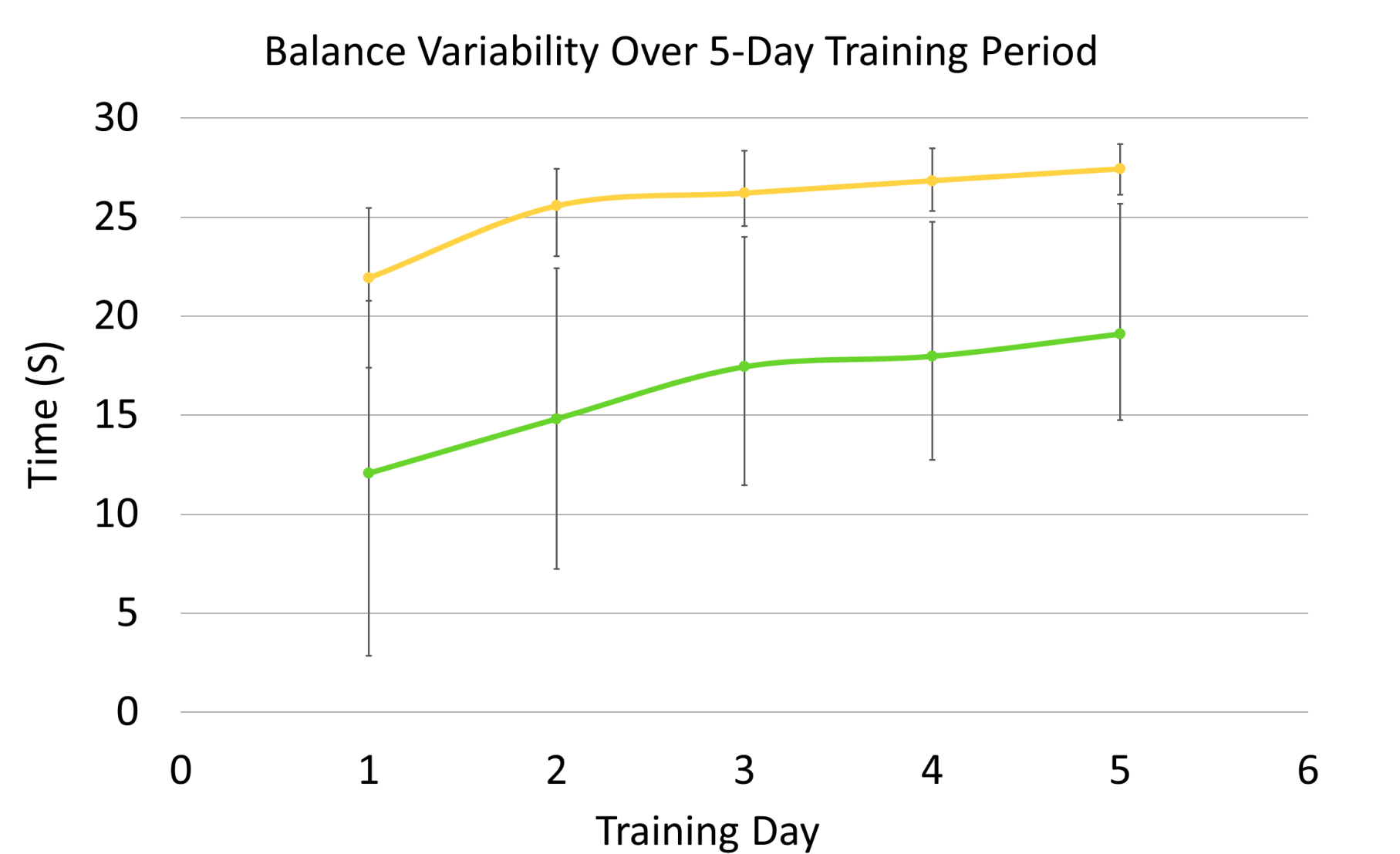



Fig. 2: Children with CP show greater variability than TD children during training, but variability reduces overtime.

- DISCUSSION**
- While TD children achieved almost maximum performance with training, children with CP may need more training to achieve this same performance.
 - Alternatively, children with CP may reach maximum motor learning potential after a certain dose, therefore requiring other therapeutic interventions.
 - Although limited by sample size, this preliminary data can inform further research on determining therapeutic dose and challenge progression in children with CP.

 Green represents Cerebral Palsy Awareness. It symbolizes youthfulness and vibrancy, as well as hope for acceptance and treatment advancement.