

Background

- Cerebral palsy is marked by atypical brain development
- The cerebral cortex, basal ganglia, cerebellum and the motor cortex can experience injury
- Decreased muscle coordination/control and impaired body movement are limitations to cerebral palsy
- Due to impaired body movement, some persons with cerebral palsy are restricted to an electric wheelchair

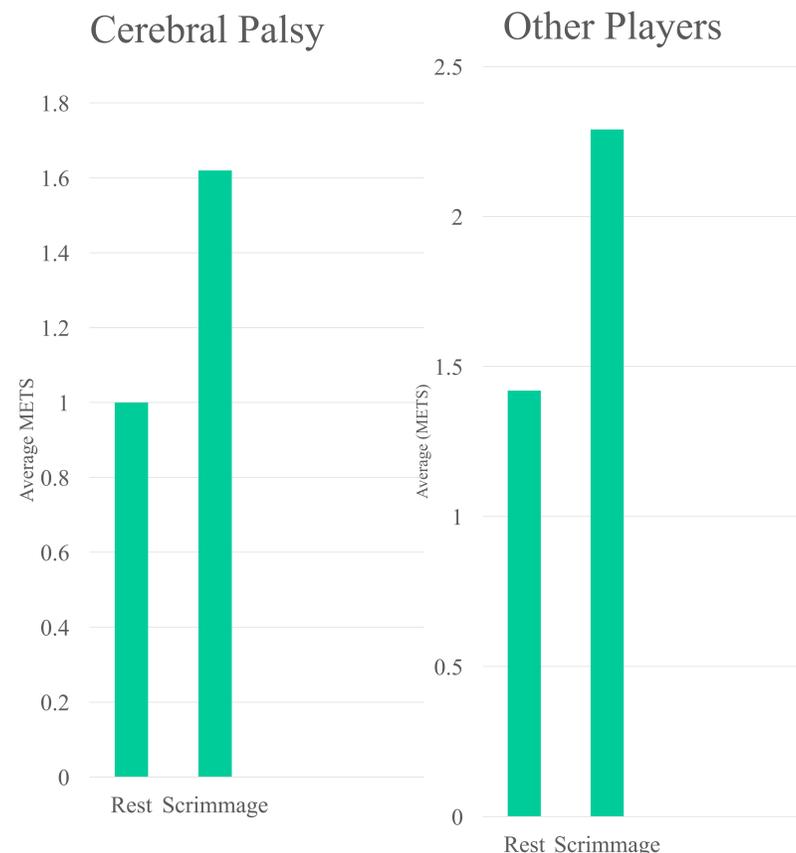
Results

- The average METS recorded for all players
- Player with Cerebral Palsy
 - Rest: 1 MET
 - Scrimmage: 1.62 METS
- Other Players
 - Rest: 1.42 METS
 - Scrimmage: 2.29 METS

Purpose

- It is unclear if an electric wheelchair prevents persons with cerebral palsy from reaching an exercise intensity during sport and physical activity.
- The purpose of this study was to evaluate energy expenditure of a cerebral palsy power wheelchair soccer player to determine exercise intensity.

Acute Comparison



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Method

- Participant
 - Female athlete from local wheelchair league
 - Age:46, Type: Spastic
- Instrument
 - Portable Metabolic Unit K4B², RPE 6-20
- Procedure
 - Assessed athlete during rest and warm-up for 5 minutes
 - Assessed athlete during scrimmage for 10 minutes
 - After scrimmage, assessed RPE score
 - Recorded VO₂ score every 30 seconds during warm-up and scrimmage
- Analysis
 - Determined exercise intensity and METS

Discussion

- Player stated RPE was a 14 (Somewhat hard) for the drill and an RPE of 15 (Hard) during the scrimmage on a scale of 6-20, where 14/15 is considered vigorous activity
- As activity became harder, player experienced a slight increase in VO₂
- During the scrimmage, the player expended a MET VO₂ of 1.62.
- Player showed an RER of .81 at rest and .75 during the high point of exercise. An RER score around .80 indicates mostly fat burn, which occurs during low intensity exercise.
- This demonstrates an overall low energy expenditure and high RPE possibly due to the added wheelchair and muscle contraction.
- Compendium Comparison: 1.62 METS is equivalent to sitting (eating, reading, bathing, sewing) and 2.29 METS is equivalent to heavy cleaning, washing a car, ballroom dancing (vigorous activity).