

## **Modified Abstract / Rationale**

### **Final Leadership Project LEND 2019-2020**

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**TITLE:** The effect of exercise and motor interventions of physical activity and motor outcomes for adults with cerebral palsy: A systematic review.

**PURPOSE:** The purpose of this systematic review is to identify the effect of exercise and motor interventions on physical activity and motor outcomes for adults with cerebral palsy in order to improve participation and functional mobility in individuals with cerebral palsy across the lifespan.

**METHODS:** Nine databases were searched from their inception to March 2020. Inclusion criteria were group studies of at least 5 adult participants with CP that assessed the effect of exercise or motor interventions on motor or physical activity outcomes. Twenty-one studies were included: 8 level II randomized control trials (RCTs), 4 level III non-RCTs and 9 level IV prospective cohort studies. Risk of bias was low for 1 RCT, moderate for 5 RCTs, and high 2 RCT's and 3 non-RCTs.

**RESULTS:** Participants included 358 adults with CP ranging from 18-77 years with all types of CP. Interventions included: strength training (n=7), gait training (n=6), balance training (n=2), aerobic training (n=2), functional training (n=2), upper extremity task training (n=1), and whole body vibration (n=1). Between-group results from level II and III intervention studies support that participation outcomes improved with gait training and balance training; activity outcomes improved with gait training, strength training, and balance training; and body, structure, and function outcomes improved with gait training and strength training.

**CONCLUSIONS:** Low quality evidence supports the feasibility, safety and efficacy of exercise and motor interventions for adults with CP. Further rigorous research is needed with well-controlled study designs, adequate sample sizes and manualized protocols.

**CLINICAL RELEVANCE:** This systematic review informs evidence-based exercise and motor interventions for adults with CP.