

PROJECT TITLE: Inpatient Rehabilitation Exergames in Children with Cerebral Palsy (CP) after Lower Extremity Orthopedic Surgery

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RATIONALE:

- Children with CP often need lower extremity orthopedic surgery as they grow and pain is commonly experienced during the recovery period, aggravated further by muscle spasms.
- The *Liberi Exergames*, a recumbent bicycling-based exercise video game, was designed specifically for children and youth with CP, powered by pedaling on a stationary bicycle and using game controllers

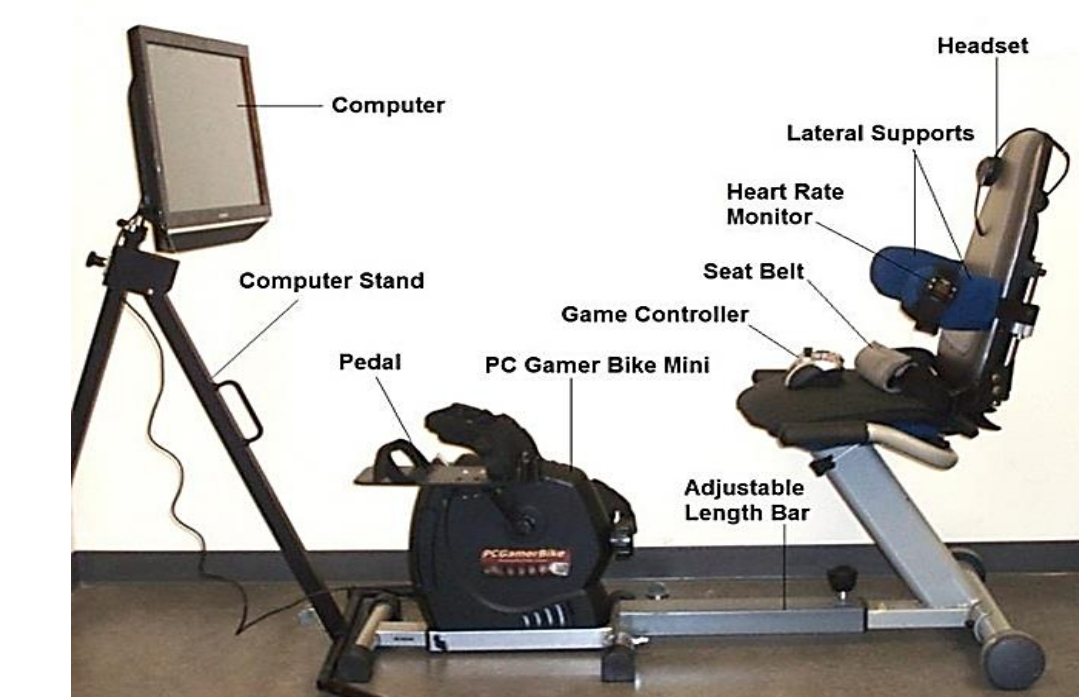
OBJECTIVES:

1. Determine the feasibility of implementing exergames into inpatient rehabilitation for children with CP
2. Evaluate if the exergames can reduce pain and improve psychosocial wellbeing in comparison to standard physiotherapy

Implementing exercise video games for inpatient children with cerebral palsy recovering from lower limb surgery is on track to being feasible



THE LIBERI EXERGAMES:



METHODS:

- Case-comparison with consecutive recruitment of children with CP recovering from lower limb surgery into 2 groups: the first 5 participants enrolled in “comparison group” and the next 5 participants enrolled in the “case group”
- Comparison group will receive standard physiotherapy and case group will engage in 30 minutes of exergames play 5 times a week for 3 weeks in addition to standard physiotherapy
- Primary outcome measures will evaluate feasibility based on:
 1. If <40% of participants who are eligible will enroll and consent,
 2. If 80% of participants complete the pain questionnaires, and
 3. If 12/15 exergame sessions are completed for each participant in the case group
- Secondary outcome measures are questionnaires looking at pain, quality of life, and engagement, to be completed by both groups

RESULTS (SO FAR):

- 100% of potential participants who were eligible for the study enrolled and consented
- 100% of the current participants have completed all pain questionnaires
- All current participants have completed at least 12/15 exergame sessions

NEXT STEPS: The final participant will be starting exergames in July and data analysis will be completed to determine whether the exergames can reduce pain and improve psychosocial wellbeing

RELEVANCE: These results will provide the basis for developing larger research studies to evaluate the benefits of cycling using novel and interactive technology