

## The Maine Trykers: An Interprofessional Project to Support Community Mobility and Participation

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### **Maine LEND and AMBUCS Maine Trykers:**

The Maine Leadership Education in Neurodevelopmental Disabilities (LEND) is a program aimed at training healthcare providers, parents, and educators across multiple disciplines about early identification and provision of effective services for children with neurodevelopmental disabilities.

AMBUCS is a national non-profit organization dedicated to helping individuals with disabilities achieve greater mobility and independence by partnering with physical, occupational, and speech therapists to provide adaptive trykes to children and adults with mobility limitations. The *Maine Trykers* is our state's AMBUCS-sponsored chapter with a mission of promoting community inclusion through mobility. The Maine LEND has partnered with this program to act as a linkage to resources for families of children with disabilities and seeks to provide mobility, play, and community recreation through the use of cycling.



Maine LEND Program:

<https://www.une.edu/LEND>

AMBUCS:

<https://ambucs.org>

Maine Trykers:

<https://www.facebook.com/AMBUCSMaine/>



### **Background & Supporting Literature**

#### *Background*

Participation in play and leisure occupations is critical for children with and without disabilities. Through participation, children acquire new skills, make sense of their contextual surroundings, learn about their strengths and abilities, form friendships, and gain social competence. It promotes biopsychosocial development, physical and mental health, and overall quality of life. (Dahan-Oliel et al., 2011; Hoogsteen & Woodgate, 2010). Children with disabilities are at risk for decreased participation in active leisure occupations (Hoogsteen & Woodgate, 2010; Logan et al., 2016).

Adapted recreation opportunities aim to decrease barriers to active participation in order to encourage biopsychosocial health and wellness. Adapted cycling is one such option that can be applied in a clinical, community, or home-based setting.

### *Evidence*

Participation in occupations involves complex and dynamic interactions among the person, their environment, and the occupation. For this reason, higher levels of research (i.e. true randomized controlled trials) may not be equipped to capture the deep interconnectedness of the spirit-mind-body-world relationship (Champagne, 2008). Much of the research related to adapted cycling spans Level III to Level V levels of research (Holm, 2000) and reflects the dynamic and individualized reality of occupational participation.

There is a growing base of evidence in support of adapted recreational cycling as a means of enhancing health and wellbeing among children with neurodevelopmental disabilities. Though sample sizes tend to be relatively low in the available literature, research suggests positive outcomes in **psychosocial** and **physical** domains.

Research suggests **psychosocial** benefits from adapted cycling across three primary domains related to occupational participation: self-efficacy, social skills, and family and peer relations. Following an adaptive tricycle intervention program, children with unilateral neglect demonstrated increased independence in home activities as well as increased self-efficacy and desire to explore other challenging physical occupations (Lyon, 2007). After other adapted cycling programs, children with autism spectrum disorder demonstrated increased social skill generalization (MacDonald et al., 2011) and children with cerebral palsy exhibited increased social participation in the community and at school (Pickering et al., 2013). Other outcomes reflected improved peer and family relationships (MacDonald et al., 2011) and increased physical activity among the family as a whole (LaPorte, 2010).

Studies involving adapted cycling also suggest positive **physical** benefits. In addition to an overall increase in physical activity among individuals with disabilities (LaPorte, 2010), adaptive cycling can elicit positive gains in client factors relating to body function. Among children with cerebral palsy, a home-based program yielded results indicating improvements in range of motion, fine and gross motor skills, and visual motor integration (Bosek et al., 2012), and a community-based program noted increased muscle strength and length (Pickering et al., 2013). An intervention program for children with unilateral neglect in an occupational therapy setting showed improved functional performance in regard to distance, duration, and number of steps taken (Lyon, 2007).

### *Conclusion*

Adapted cycling is an inclusive occupation that can reduce barriers to participation for children with neurodevelopmental disabilities and promotes psychosocial and physical health and wellbeing. The literature highlights the versatility of this occupation across environments: in therapy sessions, community programs, and at home. Cycling is an occupation that can be utilized as a means or an end – as a therapeutic intervention, a platform for age-appropriate social peer interactions, or a family-wide leisure occupation therefore can be utilized by occupational therapy practitioners to meet a variety of client needs.



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