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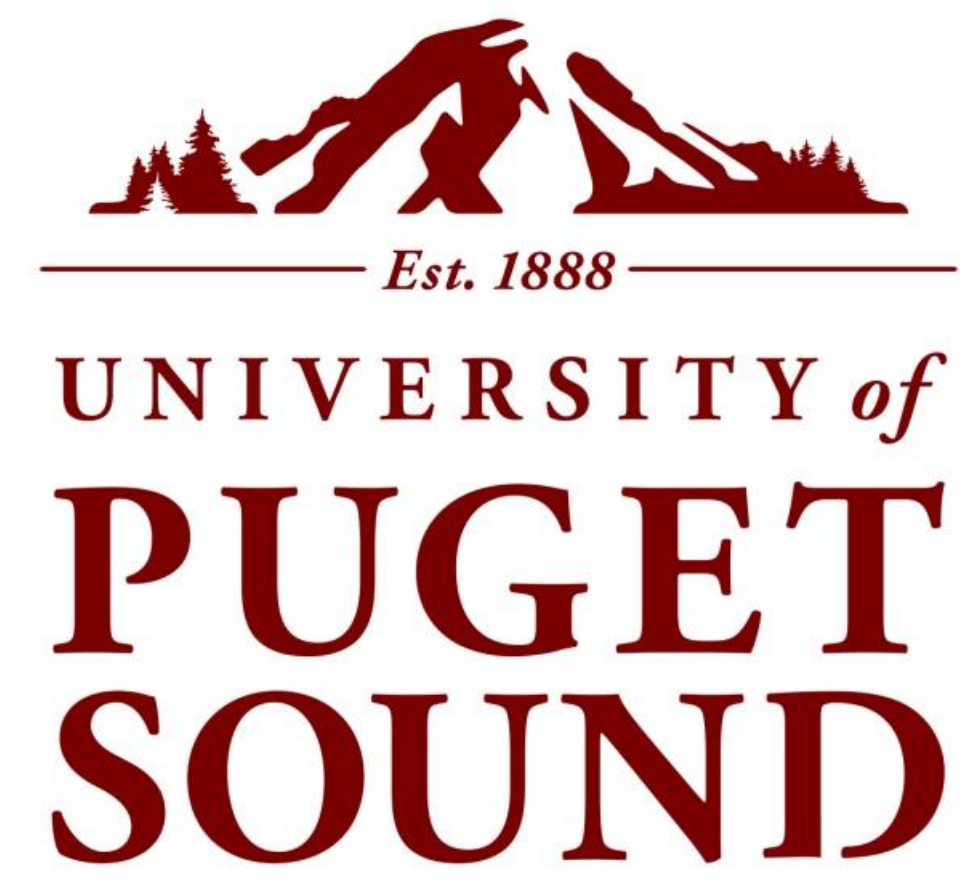


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Feasibility of Twice a Week in-Clinic Treadmill Intervention in Infants with Down Syndrome

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INTRODUCTION

Children with Down syndrome (DS) on average take 3 independent steps at 24- 26 months while typically developing children will walk independently at around 12 months. In-home treadmill training has been shown to be an effective intervention to reduce delayed onset of walking for infants with DS. Twice a week treadmill training outside the home can be an effective intervention for children with cerebral palsy.

Purpose: To assess whether 20 minutes of in clinic treadmill training twice weekly for infants with DS is a feasible intervention.

METHODS

Three children with DS were included in the study.

Inclusion criteria: Children with DS at a developmental level in which they were able to pull themselves to stand, but not yet walk.

Exclusion criteria: Children who did not have another developmental diagnosis.

Outcome measures: Gross Motor Function Measure (GMFM) sections D and E.

Procedure: Pre and post intervention testing included 5 minutes of treadmill walking and scores D and E of the GMFM. 20 minute treadmill sessions occurred twice weekly for 8 weeks. Walking time, mood, and milage were recorded.

RESULTS

Figure 1. Average number of steps taken in one minute

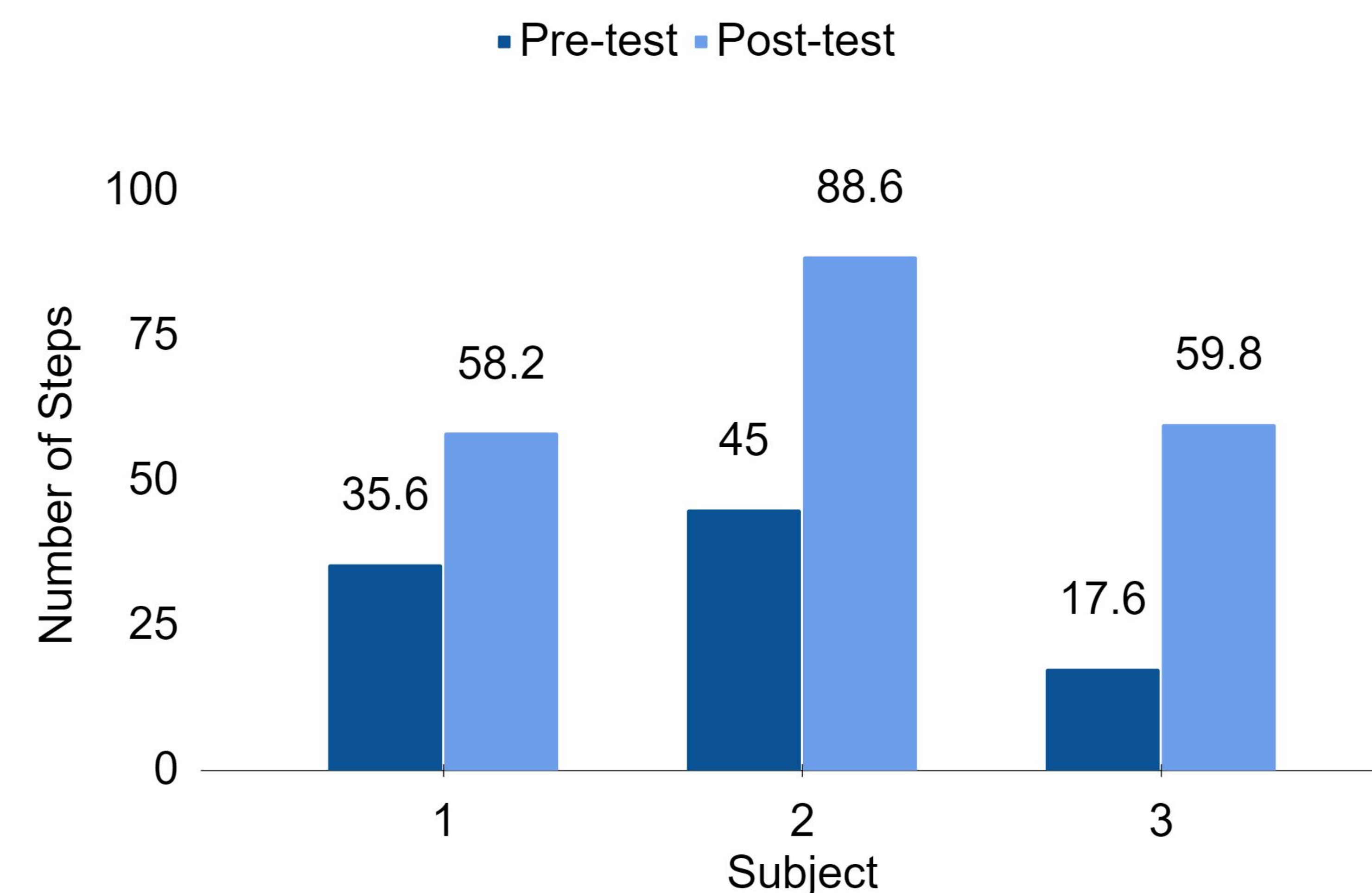


Figure 2. GMFM results

Subject	Section D		Section E	
	Pre-test	Post-test	Pre-test	Post-test
1	15	29	11	17
2	18	7	6	8
3	6	8	3	10

All subjects improved their step count pre- to post-test (figure 1). Subjects 1 and 3 improved their GMFM-D scores by 14 and 2 points, respectively (figure 2). All subjects tolerated the full 20 minutes of treadmill training within two sessions. Subject 1 walked independently by session 13. Subject 3 was cruising independently by session 14. All caregivers reported the intervention was valuable.

DISCUSSION

Treadmill training in clinic settings is a feasible method of treatment for children with DS to reduce delayed onset of walking. Continued research, at a larger scale, is needed to determine the feasibility of treadmill training for children with DS in a community setting.

CONCLUSION

The results from this study, similar to those of previous studies done in the home, show the feasibility of doing this type of intervention in a clinical setting rather than in the home while creating favorable outcomes. This method of treadmill training is easier to administer using consistent cueing and form, more cost effective as the families will not have to obtain their own treadmill and less time intensive, only attending twice a week.