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Commentary

Commentary on "Health parameters in standing and non-standing non-ambulatory adults with cerebral palsy"

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Cerebral palsy (CP) is a condition that affects people who live with primary impairment of the motor system affecting the trunk and extremities. The condition has onset occurring during fetal life or in the early developmental years [1]. Seizures can be associated with CP, as well as secondary impairments involving sensation, cognition, behavior, communication, and the musculoskeletal system. Challenges with performing activities of daily living and community participation are intrinsic to the CP condition, which has a prevalence of about 2-3 per thousand live births [2,3]. The etiology of CP is multifactorial with risk factors including premature birth, infection, asphyxia, placental abnormalities, and other forms of perinatal and postnatal discord [3]. People with CP are living longer along with advances in medicine, surgery, and related healthcare services [4-6].

The study focuses on a population of non-ambulatory adults with the cerebral palsy condition separated into two groups. Adults in one group have been standing on a regular basis and those in the other group have not. To be entered into the standing group one has to be standing at least three-times per week, 30 minutes per episode, 70 degrees or more up from the horizontal over a 2-year duration. Standing exercise is very common in children and adults in this population especially for those with more severe physical involvement [7]. Research is limited on the benefits of standing exercise which is often felt anecdotally to facilitate improvements in bowel care, bone density, range of motion, pulmonary functions and quality of life [7-11]. There are no prior studies identified by the authors with a focus solely on adults having the CP condition and any associated long-term lifespan benefits.

The study did not find any differences between our study populations of adults with CP when comparing the standing group to the non-standing group. Even at the study enrollment, identified differences are absent between these two groups despite years of standing already completed by those in the standing group. In the author's opinion, it would likely take standing daily and for longer durations to identify clear differences in this population between those who stand and those who do not. Such increased frequency and durations may well occur into the future with the advent of more power wheelchairs having standing power options built into their engineering [12].

The key observation of a functional stand pivot transfer identified in only those individuals with a history of standing over their lifespan needs further study. Identified functional head control over 30 seconds and FIM (Functional Independence Measure) scores greater than 55 occur only in those with a history of standing also. At the minimum, the data presented encourages further study of more dynamic functional outcome variables when evaluating the benefit from standing exercise in those individuals having non-ambulatory status. Improved head and neck control may facilitate relative ease when adapting to computer interface software via scanning or pointing techniques [13]. Such software participation may prove quite helpful for job site or academic participation in addition to social, communication and other endeavors involving recreation.

As stated in the article, the value of a functional stand pivot transfer is difficult to overestimate. The elimination of Hoyer lifts, ceiling tracts and other body lifting equipment is precious. Such equipment is not often available if one wishes to travel into the community and enjoy destinations

to include dining out, theater or the home of a family member or friend. A functional stand pivot transfer also presents less risk of back pain and additional trauma to care attendants who may otherwise feel a need to provide more physical lifting. The frequency of low back pain in nurses associated with lifting ranges between 40% and 97.9% and occurs more frequently in nurses when compared to other individuals [14]. The authors encourage our nursing colleagues and other providers to help facilitate functional standing in non-ambulatory individuals with CP and related conditions across the lifespan.

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