Investigating Patterns of Infant Physical Activity During the First Year of Life

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The present case study investigates naturalistic patterns of infant physical activity (PA) during the first year of life. This research seeks to address the absence of literature regarding infant PA; due to the ease with which walking skills are often used to assess PA. Our preliminary research investigated the impact of infant locations (restrictive vs. nonrestrictive) and posture; finding both influential to an infant's ability to engage in PA. Significant differences, investigated via One-way ANOVAs, manifested in an increase of frequency and duration, both in nonrestrictive locations ($p=.025$), and posture exhibition ($p<.001$); within the first year. This preliminary investigation further emphasized the relationship between infant location, posture, and PA via a correlational analysis. Indicating a significant correlation between infant age in months, and the number of postural transitions, per hour of playtime ($r(66) = .573, p = < .001$).

In order to expand this preliminary investigation, we assessed the spontaneous movements (SM) of three healthy infants (2f, 1m), longitudinally. Observations consisted of monthly home visits, in which the researcher immersed themselves and recorded the infant’s SM for 20-40 minutes, without intervention. Behavioral analyses of video data required the creation of an SM coding manual; in which, infant PA was operationally defined as: ‘any movement generated by the infant, independent of gravity or external interventions (e.g. caregiver, etc.)’. Data was coded continuously to determine the frequency and duration of PA at months: 03, 06, 09, 12 (+/- 3 weeks). Resulting in a descriptive analysis assessing each infant’s percentage of PA time, within specific locations (restrictive vs. nonrestrictive). Strong patterns of increased infant PA within non-restrictive locations were observed, across the 12 months. The implications of these PA patterns indicate that increasing infant time within nonrestrictive locations, increases their opportunity for PA, and may ultimately influence an earlier onset of motor milestones.