FRESNO STATE
College of Health and Human Services

Joint Visual Attention: Effects of Crawling in Typical Developing and Infants with Spina Bifida

Researchers:

- Monica Rivera, PT, DPTSc, Department of Physical Therapy, Fresno State
- Joseph Campos, PhD, Institute of Human Development, University of California Berkeley
- David Anderson, PhD, Department of Kinesiology, San Francisco State University

Purpose

Infant crawling is associated with increases in “Following the point and gaze” more commonly called “Joint Visual Attention” (JVA). While several infant studies have confirmed that the onset of mobility is associated with increased performance, there are limited studies in infants with motor disabilities. Therefore, the purpose is to investigate JVA in infants with spina bifida (SB) to discover if the late onset of mobility shows increases in JVA performance. The study will investigate TD infants in JVA performance and looking preferences between crawling and non-crawling infants.

Number of Subjects

30 8-9 month-old TD infants and seven infants with SB

Materials/Methods

Three cameras documented eye gaze during JVA testing. The experiment implemented eight targets, four to each side, set at 90 degrees from one another. Two independent coders using Mangold Interact software analyzed correct looks, gaze on examiner, and looking direction. The SB infants were compared from their crawling vs non-crawling data.

Results

In TD infants, there was a significant increase in crawlers following the correct target compared to the non-crawlers, $F(1,56)=4.88$, $p=0.03$. Crawling infants with SB showed a significant increase in correct target looking compared to their non-crawling phase, $F(1,24)=9.30$, $p=0.005$. Furthermore, crawling TD infants demonstrated looking preferences when compared to non-crawling infants, $F(1,112) =11.70$, $p=0.0009$. Conclusions: Similar to TD infants, the onset of mobility increased following the point and gaze in infants with SB. TD infants showed a preference to follow the gaze to lower targets in both the crawling and non-crawling groups.