THE IMPACT OF CONJUGATE REINFORCEMENT ON THE LEG MOVEMENTS OF INFANTS WITH SPINA BIFIDA (SB)

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BACKGROUND AND PURPOSE: Infants with SB typically present with neurologic and orthopedic impairments. They usually learn to walk significantly later than typically developing (TD) infants. This delay appears to be related to the fact that they move their legs and kick less often than TD babies. The purpose of this study was to investigate if conjugate reinforcement can be used to increase how often infants with SB move their legs and kick.

METHODS AND MATERIALS: The LMs of 7 infants with lumbar or sacral SB were video-taped while they were supine in 3 conditions: Baseline; Acquisition (tethered to a mobile); and Extinction. The video-tape of each infant’s LMs were behavior coded to identify how often each baby produced LMs and kicks in each condition.

ANALYSES: A Pearson correlation between LMs and kicks was calculated. Paired t-tests were used to compare (1.) the frequency of LMs of the tethered leg to the untethered leg in the acquisition condition and (2.) the frequency of spontaneous versus goal directed LMs and kicks.

RESULTS: A significant correlation was observed between LMs and kicks. The babies moved their tethered leg significantly more often than their untethered leg in the acquisition condition. They generated significantly more LMs in the goal-directed condition compared to baseline, but did not produce more kicks in the goal-directed condition compared to baseline.

CONCLUSIONS: The present results suggest that conjugate reinforcement may be used to increase how often infants with SB move their legs and kick. Additional infants should be recruited to increase the generalizability of the current results.

IMPLICATIONS: Therapists and parents may consider using conjugate reinforcement to increase how often infants with SB move their legs and kick. This type of a compensatory movement experience may help them learn to coordinate their LMs early in life in preparation for walking.