Original article (short paper)

Movement patterns during the process of standing up in children with spastic diplegia

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Abstract — The analysis of the movement patterns of children with spastic diplegia (SD) during the process of standing up can contribute to a better understanding of postural control. The purpose of this study was to describe the movement patterns during this task in children with SD and typical development and to analyze the differences according to their age group. Participated 40 children (38-154 months), 20 children with SD and 20 children with typical development. The participants were instructed to lie down in a supine position and quickly stand up (10 trials). Motor task sessions were videotaped and subsequently analyzed. Children with SD had more asymmetrical and less efficient movement patterns in the Upper Limbs (UL), Axial Region (AR) and Lower Limbs (LL). The oldest group of children with SD did not have more mature and efficient movement patterns, and the oldest children with typical development had more mature and efficient movement patterns in the UL and AR.

Keywords: spastic diplegia, motor patterns, postural control

Introduction

The term cerebral palsy refers to a range of clinical symptoms, with related service requirements, resulting from lesions or abnormalities in the brain that develop early in life (Bax et al., 2005). From a motor control perspective, cerebral palsy can be characterized as a group of movement disorders with various types of motor dysfunction (Parker, Carriere, & Habesttuit, 1993; Woollacott & Shumway-Cook, 2005). Movement and posture are affected in cerebral palsy patients (Burtner, Woollacott, Craft, & Roncesvalles, 2007; Ferdjallah, Harris, Smith, & Wertsch, 2002), with a limited ability to adjust...