

Functional Impairments in Patients with Joint Hypermobility Syndrome and Developmental Coordination Disorder

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Purpose: The purpose of this study was to investigate functional difficulties in patients with joint hypermobility syndrome (JHS) and an association with developmental coordination disorder (DCD).

Relevance: There is experimental evidence to show that patients with JHS have poor proprioception and balance. Clinical experience suggests that patients with JHS report 'clumsiness', tripping and falling and that these motor skill impairments may be associated with DCD.

Methods A sample of 90 patients with JHS (mean age 34.7 ± 9.9 years, 83 female), diagnosed according to the Brighton Criteria were compared with 113 healthy volunteers (mean age 35.7 ± 12.9 , 82 female) with no musculoskeletal pain. Information relating to DCD and functional impairments was collected by means of the self report functional difficulties questionnaire (FDQ-9).

Analysis: Numerical data were analysed using independent sample t-tests and Mann-Whitney U. Individual items of the FDQ-9 were analysed using a chi square test.

Results: Patients with JHS reported significantly higher functional difficulties scores ($M= 22.28, \pm 4.90$) than healthy volunteers ($M= 17.97, \pm 3.72$) ($p < 0.001$) indicating greater functional difficulties. Patients with JHS were 3 times [95% CI 2.0 – 4.6] more likely to report DCD than healthy volunteers. Patients with JHS and DCD were significantly more likely to report impaired balance and obstacle avoidance skills than healthy volunteers with DCD.

Conclusions: This study established that gross motor skill impairments reported by patients with JHS are associated with DCD. Patients with JHS and DCD are likely to report poor balance and therefore may be at risk of falls.

Implications: This study highlights the prevalence of functional difficulties reported by patients with JHS and DCD. It is suggested there is a requirement to assess and treat the perceptual impairments which contribute to these functional difficulties.

Key-words: 1. Joint hypermobility Syndrome 2. Developmental coordination disorder 3. Poor balance

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Ethics approval: The study protocol was approved by the National Hospital for Neurosurgery and Neurology and the Joint Institute of Neurology Research Ethics Committee, UK. (ref 09/H0716/5).