

Relationship between hypermobility and movement proficiency in 6-12yr old children

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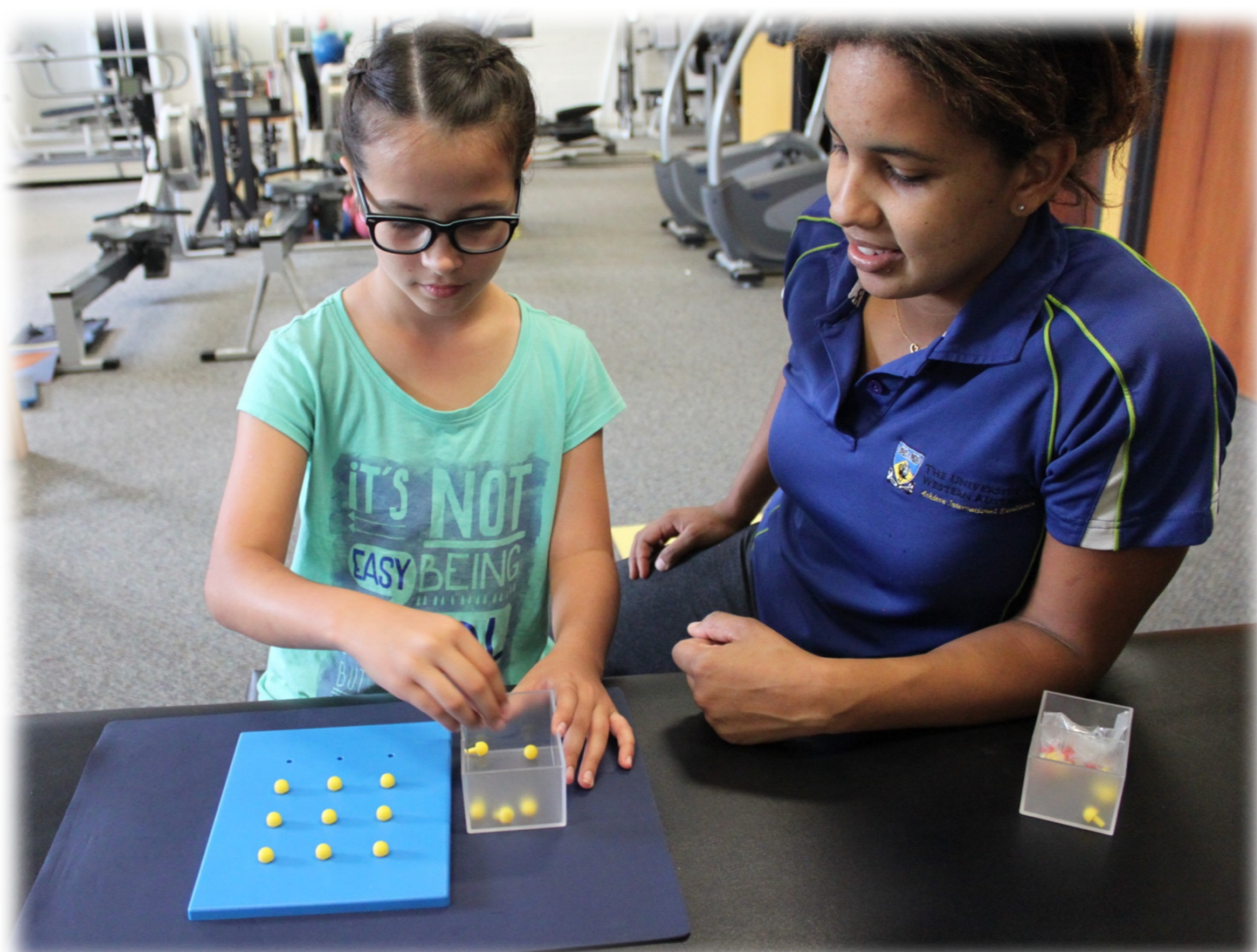
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INTRODUCTION

Previous research has demonstrated that some children with identified or symptomatic joint hypermobility syndromes also have lower movement proficiency (LMP).¹

However, the frequency of hypermobility amongst the general LMP population remains poorly understood. It is possible that many children with LMP also present with asymptomatic joint hypermobility, a factor that may contribute to the difficulties experienced with their movement.

This project examined the relationship of hypermobility to movement proficiency and its frequency in children with LMP.



METHODS

Sixty aged matched children (M age 7.9±1.6yrs) were recruited from the community. There was no significant difference between groups when accounting for sex, so it was treated as one group.

- Male: n=40 (M age 7.9±1.5)
- Female: n=20 (M age 8.0±1.8)

Movement proficiency was assessed via the Movement Assessment Battery for Children-2 (MABC-2). Those who fell below the 16th percentile were considered to have LMP.

Measures of hypermobility using goniometry included:

- Beighton score (original and revised cut off scores)^{2,3}
- Lower Limb Assessment Score (LLAS)⁴
- Brighton Criteria⁵

RESULTS

No children met the criteria for joint hypermobility using the Brighton Criteria, however 60% were classified as hypermobile using the standard Beighton cut-off score and 35% via the LLAS.

Based on previous research we utilised the revised Beighton cut off score of 7, resulting in 26% of the sample classified as hypermobile.

Of the total sample 50% were identified to have LMP, with 30% and 46% also classified as hypermobile by the Beighton revised and LLAS, respectively.

Independent samples t-tests comparing those children classified as having LMP (n=30) to those who are typically developing (n=30) demonstrated no significant difference between groups on the Beighton score, but a significant difference on the LLAS score.

However, the mean of both groups did not meet clinical criteria for hypermobility. Additionally, there was no significant relationship between movement proficiency and hypermobility outcomes.



n=60 *p≤0.05	Typically Developing		Low Movement Proficiency		t	p
	Mean	Standard Deviation	Mean	Standard Deviation		
Beighton	4.77	2.39	5.40	2.11	-1.08	0.28
Lower Limb Assessment Score	5.67	1.64	6.60	1.80	-2.10	0.04*

DISCUSSION

- Results demonstrate no relationship between movement proficiency and hypermobility.
- Hypermobility and movement proficiency appear to be distinct constructs.
- There appears to be a lack of coherence between diagnostic testing criteria for hypermobility, with a large variance in diagnosis rates between objective measures.
- Children who experience greater mobility in addition to coordination difficulties warrant particular attention from clinicians in order to effectively target deficits.



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