TITLE: Pediatric Standing Frames for Children with Chronic Disability: Clinical and Comparative Effectiveness, and Guidelines

DATE: 8 July 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of pediatric standing frames for children with chronic disability?

2. What is the comparative effectiveness of dynamic standing frames versus static standing frames for children with chronic disability?

3. What are the evidence-based guidelines regarding the use of pediatric standing frames for children with chronic disability?

KEY FINDINGS

Two non-randomized studies and two evidence-based guidelines were identified regarding pediatric standing frames for children with chronic disability.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were added to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and June 24, 2015. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
**SELECTION CRITERIA**

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

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<th>Table 1: Selection Criteria</th>
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<td><strong>Population</strong></td>
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<td><strong>Intervention</strong></td>
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<td><strong>Comparator</strong></td>
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<td><strong>Outcomes</strong></td>
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<td><strong>Study Designs</strong></td>
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**RESULTS**

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Two non-randomized studies and two evidence-based guidelines were identified regarding pediatric standing frames for children with chronic disability. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

**OVERALL SUMMARY OF FINDINGS**

One non-randomized study¹ examined the effect of active ankle stretching using a dynamic standing frame for children with cerebral palsy. Participants played custom computer games using ankle movements. The authors found there was a significant increase in both active and passive ankle dorsiflexion. The second non-randomized study² compared the impact of passive and dynamic standing frames on bone health in non-ambulatory children with cerebral palsy. A significant increase in bone mineral density was observed in the active group.

Two evidence-based guidelines were identified.³⁴ One guideline³ recommends that standing programs for non-ambulatory or limited movement pediatric patients be used five days per week in order to improve bone mineral density, hip stability, joint range of motion (hip, ankle, and knee), and spasticity. The National Institute for Health and Clinical Excellence⁴ recommends the use of standing frames for children between one and three years old that are Gross Motor Function Classification System level IV or V; however, more research is required before program frequency or dosing can be recommended.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies

Physiological Outcomes


Guidelines and Recommendations

   Full-text available from: http://journals.lww.com/pedpt/Fulltext/2013/25030/Systematic_Review_and_Evidence_Based_Clinical.2.aspx

   See: Section 4.2

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies

Alternate Outcomes


Surveys


Clinical Practice Guidelines – Methodology Not Specified


Review Articles


Additional References