TITLE: Upper Extremity Motion Capture for Pediatric Patients with Brachial Plexus Injury: Diagnostic Accuracy and Clinical Effectiveness

DATE: 29 June 2015

RESEARCH QUESTIONS

1. What is the diagnostic accuracy of upper extremity motion capture systems for brachial plexus injury in pediatric patients?

2. What is the clinical effectiveness of upper extremity motion capture systems for the assessment of pediatric patients with brachial plexus issues?

KEY FINDINGS

No relevant literature was found regarding upper extremity motion capture systems for brachial plexus conditions in pediatric patients.

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 applied 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 15, 2015. Internet links were provided, where available.

SELECTION CRITERIA

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

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<td><strong>Population</strong></td>
<td>Pediatric patients (0 to 18 years) with brachial plexus injury, palsy or neuropathy of the upper extremities</td>
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<td><strong>Intervention</strong></td>
<td>Upper extremity motion capture</td>
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| **Comparator** | Q1: Other methods of diagnosing brachial plexus injuries (e.g., expert clinical examination, diagnostic imaging [magnetic resonance imaging, computed tomography, electromyography, electoneurography])
|         | Q2: No comparator                                                                                      |
| **Outcomes** | Q1: Diagnostic accuracy outcomes (e.g., sensitivity, specificity, positive and negative predictive value)
|         | Q2: Clinical effectiveness (e.g., change in treatment or patient management decisions, recovery time, recovery [e.g., range of motion], functional independence measure); Harms |
| **Study Designs** | Health technology assessment, systematic review, meta-analyses, randomized controlled trials, non-randomized studies |

**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 and non-randomized studies.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified regarding upper extremity motion capture systems for brachial plexus conditions in pediatric patients.

References of potential interest are provided in the appendix.

**OVERALL SUMMARY OF FINDINGS**

No relevant literature was found regarding upper extremity motion capture systems for brachial plexus conditions in pediatric patients; therefore, no summary can be provided.
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
No literature identified.

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APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies

Technology Development


Assessment Model Development


Healthy Adult Populations – Assessment Method Development


Alternate Outcomes