

## BACKGROUND:

- Cervical motor control exercises are an important tool used by physical therapists (PTs) in addressing cervical motor control impairment (CMCI) in the conservative management of neck pain symptoms.
- The Neckcare System (NCS) is a new tool with great potential to improve the understanding and management of neck pain by providing **novel, and multiplanar, data on movement control.**

## PURPOSE:

The purpose of this study was to describe changes in PTs management of neck pain as they integrated the NCS into clinical practice.

## METHODS:

- **Participants:**
  - 8 PTs from two orthopedic, outpatient clinics.
- **Focus Groups** of the same 8 PTs met every 2-weeks for a total of 8 sessions to track the integration and use of the NCS in their practice.
- **Rapid Qualitative Analysis** was used to explore PTs:
  - 1) Current practice
  - 2) Use of assessment results to guide treatment.
  - 3) Perceived barriers to integration of NCS.

## RESULTS:

<u>Initial</u>	<u>Midpoint</u>	<u>Final</u>
<ul style="list-style-type: none"> <li>• Craniocervical Flexion Test</li> <li>• Qualitative Visual Assessment</li> <li>• Deep cervical flexor endurance training</li> </ul>	<ul style="list-style-type: none"> <li>• New hypotheses about underlying mechanisms</li> <li>• More varied treatment approaches               <ul style="list-style-type: none"> <li>• Dynamic head movements</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• NCS data to generate CMCI hypotheses for complex patients.</li> <li>• Nuanced treatment approaches.</li> </ul>
<p><i>“quality of their movement ... How much cuing they require, and how much accessory muscle use they rely on to generate that movement.”</i></p>	<p><i>“Different planes of movement, as opposed to just seeing, can they do a good chin tuck... And I think I'm doing that, probably because I see that they don't do well on a Butterfly test, or the Joint Position Error.”</i></p> <p><i>“maybe she's isolating the movement better, she actually has better motor control? Because she's isolating it better, she actually has less range?”</i></p>	<p><i>“it was informative of what we're doing and how that fits in...improving her midrange control now that we've been more focused.”</i></p>

## CONCLUSIONS:

- PTs' **treatment approaches evolved** with continued integration of NCS data.
- Those that **incorporated NCS data more consistently** into their hypotheses regarding CMCI reported **greater variation in treatment** progressions.
- Late in the study PTs:
  - Highlighted using **longitudinal** NCS data.
  - Integrating NCS data for greater patient complexity.
  - Integration of **patient perception** of NCS data.
- **Barriers to integration changed** from mistrust of data to time constraints and accessibility.

## RELEVANCE FOR PATIENT CARE:

- Emerging technologies have the potential to improve precision care and outcomes in physical therapy practice.
- **By improving understanding of how PTs adapt their clinical reasoning and treatment approach to integrate emerging technologies, our findings may provide useful information to assist with technology uptake.**

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