*Short Communication*

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# Clinical Prediction Rules for Physical Therapy in Neck Pain: Decision or Direction?

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**Abstract**

This short communication article outlined the CPRs on neck pain for use in physical therapy (PT) practice and found two studies on mechanical traction, one study on cervical spine thrust manipulation, two studies on thoracic spine thrust manipulation. Most of the identified CPRs were basically on development, with few or none found on validation or impact analysis of CPR, which threatened the external validity of such CPRs for use in evaluation and treatment of people with neck pain.

**Keywords:** Neck Pain; Clinical Decision Making; Ortheopaedic Examination; Orthopaedic Rehabilitation.

This short communication article outlined the CPRs on neck pain for use in physical therapy (PT) practice, education, research and administration in the field of orthopaedic rehabilitation.

### *Mechanical Cervical Traction*

Caiet al [1] conducted a prospective cohort study of 103 neck pain patients whoimproved with home-based mechanical cervical traction (HMCT)of whom47 had a positive response to HMCT. Three out of four variables of the derived CPR (Fear-Avoidance Beliefs Work Subscale score < 13, pre-intervention pain intensity ≥ 7/10, positive cervical distraction test and pain below shoulder) had a positive likelihood ratio of 4.77, with the intervention's success rate increasing from 45.6% to over 80%.

Raney et al [2] developed a CPR to identify patients with neck pain who were likely to improve with cervical traction. Their prospective cohort study included 68 patients who completed six sessions of intermittent cervical traction and cervical strengthening exercises twice weekly for 3 weeks of whom 30 had a successful outcome. Having three or four present out of following five CPR variables: (1) patient reported peripheralization with lower cervical spine (C4-7) mobility testing; (2) positive shoulder abduction test; (3) age > or =55; (4) positive upper limb tension test A; and (5) positive neck distraction test, increased the likelihood of success with cervical traction from 44 to 79.2% or 94.8% respectively.

### *Thoracic Spine Thrust Manipulation*

Cleland et al [3] validate the thoracic spine thrust manipulation CPR in a multi-center randomized clinical trialof 140 patients who were randomly assigned to receive either 5 sessions of stretching and strengthening exercise (exercise-only group) or 2 sessions of thoracic spine manipulation and cervical range of motion exercise followed by 3 sessions of stretching and strengthening exercise (manipulation

+ exercise group). The manipulation group had better improvements in disability and lower pain scores, which demonstrated that patients with mechanical neck pain who received thoracic spine manipulation and exercise exhibited significantly greater improvements in disability at both the short- and long-term follow-up periods and in pain at the 1-week follow-up compared with patients who received exercise only.

Cleland et al [4] evaluated the predictive validity of thoracic spine thrust manipulation CPR in a prospective, cohort study of 78 patientsof whom 42 had a successful outcome. Presence of 3 out of 6 variables (positive likelihood ratio=5.5) was associated with experiencing a successful outcome at 86%.

*Cervical Spinethrustmanipulation*

Puenteduraet al [5] determined the predictive validity of selected clinical examination items to develop a cervical thrust manipulation CPR in a prospective cohort/predictive validity study of 82 patients who received a standardized treatment regimen consisting of cervical TJM and range-of-motion exercise of whom 32(39%) achieved a successful outcome. Three or more of the four attributes of CPR (symptom duration less than 38 days, positive expectation that manipulation will help, side-to-side difference in cervical rotation range of motion of 10° or greater, and pain with posteroanterior spring testing of the middle cervical spine) had a positive likelihood ratio of 13.5 for a probability of experiencing a successful outcome at 90%.

This paper outlined the CPRs on neck pain for use in PT practice and found two studies on mechanical traction, one study on cervical spine thrust manipulation, two studies on thoracic spine thrust manipulation. Most of the identified CPRs were basically on development, with few or none found on validation or impact analysis of CPR, which threatened the external validity of such CPRs for use in evaluation and treatment of people with neck pain.

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