

## Thoracic Manipulation: Clinical prediction rules for clients with neck pain.

Neck pain affects 50-70% of individuals at some point in their life. 30% of those will go on to develop chronic symptoms. 5% of those will be disabled by this pain. It is one of the most common reasons for referral to Physiotherapy.

Manual therapy has been shown to be effective in the treatment of neck pain. Although effective, manipulation in the cervical spine does come with some risk. Despite the fact that the risk of vertebral artery complication is extremely low, while variable in studies, it is approximately 6 in 10 million (0.00006%), it is still present. Further complicating the selection of techniques is the lack of predictive value in the premanipulation screening procedures. It is therefore important that manipulative therapists explore the effectiveness of alternative techniques in the management of neck pain.

The biomechanical link between the cervical and thoracic spine is evident. On observation the clinician can plainly see involvement of the thoracic structures in all cervical movements. Furthermore, the neural and dural tissues span both regions. It would seem reasonable to study the effects of manipulation of the thoracic region on neck pain disorders.

### The immediate effect of Thoracic Manipulation on cervical range of motion in clients with neck pain. (Flynn et al. 2007)

Variable	Change
Pain(NPRS)	2.0/10 +/-1.4
Flexion	13.3° +/- 11.9°
Extension	2.9° +/- 9.3°
Total Rotation	10.6° +/- 13.4°
Total Sideflexion	8.3° +/- 9.6°

Change was clinically significant in all cases.

## The Clinical Prediction Rule.

This clinical prediction rules allow a treating practitioner or referring physician to identify those patients with neck pain who are likely to experience success from thoracic spine manipulation.

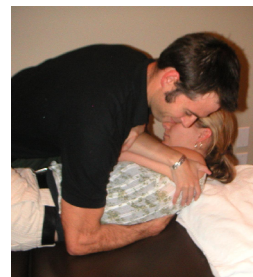


The Six variables to examine that are part of the prediction score system are:

- Symptoms < 30 days
- No symptoms distal to the shoulder
- Looking up does not aggravate symptoms
- Fear Avoidance Beliefs Questionnaire Physical Activity score(FABQPA) < 12
- Diminished upper thoracic kyphosis
- Cervical extension ROM < 30°

No of variables +ve      Probability of success

4+	93%
3+	86%
2+	71%
1+	58%



The authors recommend focusing on 3 or more variables due to the larger “n” in the study of subjects in the 3+ range. This led to the best balance of sensitivity and specificity for the prediction rule.

#### References:

Flynn T, Wainner R, Whitman J, Childs J. The Immediate Effect of Thoracic Spine Manipulation on Cervical Range of Motion and Pain in Patients with a Primary Complaint of Neck Pain – Technical Notes. ODR March/April 2007:32-36.

Cleland J, Childs J, Fritz J, Whitman J, Eberhart S. Development of a Clinical Prediction Rule for Guiding Treatment of a Subgroup of Patients with Neck Pain: Use of Thoracic Spine Manipulation, Exercise and Patient Education. Phys Ther. 2007 Jan;87(1):9-23.