To letter to the editor: 'Safety of thrust joint manipulation in the thoracic spine: a systematic review'

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We would like to thank Drs. Engel, Vemulpad and Dougherty for their thoughtful letter to the editor regarding our article in a recent issue of JMMT. They appear to raise two specific concerns: (a) case reports not being an appropriate measure of safety; and (b) the interpretation of adverse events (AEs) from thoracic thrust joint manipulation (TJM) portrayed in our article.

With respect to the first issue, the primary purpose of our review was to point out that AEs *do indeed* occur with TJM to thoracic spine. We chose the title because we wanted to highlight a concern we both have that many clinicians consider TJM to the thoracic spine to be largely without risk. We have both practiced and taught TJM skills at both entry and post-graduate levels for a combined 60+ years of experience, and it is our observation that students and experienced clinicians alike express little fear in manipulating the thoracic spine, compared to the other spinal regions. This is borne out in a recently completed survey of over 1000 physical therapists in the USA, which we plan to submit for publication soon.¹ Many clinicians are aware of the research recommending TJM to the thoracic spine for patients with neck pain²⁻⁴ and shoulder pain,^{5,6} and it concerns us that many may not adequately screen for contraindications and precautions prior to manipulating. We also believe that many clinicians may use excessive force when performing TJM to the thoracic spine and wanted to highlight these aspects (lack of appropriate screening and use of excessive force) as possible causes for some of the reported AEs.

On the second issue, we were careful to distinguish between 'side effects' and AEs. There is ample evidence that short-term side effects are common following TJM to the thoracic spine.⁷⁻⁹ Although most of the

side effects following TJM to the thoracic spine are benign and resolve within 48 hours,⁷⁻⁹ to ignore the fact that potential serious AEs can occur sets a dangerous precedent. More should be done to encourage reporting of side effects and AEs following TJM by clinicians administering the interventions. Without better reporting of serious AEs following TJM to any area of the spine, it will always be difficult to quantify the risks relative to the total number of TJMs.

Finally, we appreciate the support from the authors for recommending that all clinicians should perform a thorough examination and rely on sound clinical reasoning before administering TJM. Anecdotally, we believe that while many do this prior to manipulating the cervical or lumbar spine, there may be less vigilance when manipulating the thoracic spine because of the perception that there is little to no risk there. We would also recommend that clinicians work on honing their TJM skills so as to be able to deliver them with the minimum required leverage and force. By doing so, the incidence of side effects may also be significantly reduced.

References

- 1 Puentedura EJ, Reilly S, Slaughter R, Ventura E. Utilization of spinal manipulation: a survey study. Las Vegas: University of Nevada Las Vegas; 2015.
- 2 Cleland JA, Childs JD, McRae M, Palmer JA, Stowell T. Immediate effects of thoracic manipulation in patients with neck pain: a randomized clinical trial. *Man Ther.* 2005;10(2): 127-35.
- 3 Cleland JA, Glynn P, Whitman JM, Eberhart SL, MacDonald C, Childs JD. Short-term effects of thrust versus nonthrust mobilization/manipulation directed at the thoracic spine in patients with neck pain: a randomized clinical trial. *Phys Ther.* 2007;87(4):431-40.
- 4 Cleland JA, Childs JD, Fritz JM, Whitman JM, Eberhart SL. 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;87(1):9-23.
- 5 Mintken PE, Cleland JA, Carpenter KJ, Bieniek ML, Keirns M, Whitman JM. Some factors predict successful short-term outcomes in individuals with shoulder pain receiving cervicorhombic manipulation: a single-arm trial. *Phys Ther.* 2010;90(1):26-42.
- 6 Rhon DI, Boyles RE, Cleland JA, Brown DL. A manual physical therapy approach versus subacromial corticosteroid

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- injection for treatment of shoulder impingement syndrome: a protocol for a randomised clinical trial. *BMJ Open*. 2011; 1(2):e000137.
- 7 Senstad O, Leboeuf-Yde C, Borchgrevink C. Predictors of side effects to spinal manipulative therapy. *J Manipulative Physiol Ther*. 1996;19(7):441–45.
- 8 Cagnie B, Vinck E, Beernaert A, Cambier D. How common are side effects of spinal manipulation and can these side effects be predicted? *Man Ther*. 2004;9(3):151–56.
- 9 Senstad O, Leboeuf-Yde C, Borchgrevink C. Frequency and characteristics of side effects of spinal manipulative therapy. *Spine (Phila Pa*. 1997;22(4):435–440, [discussion 440-431].