Letter to the editor

In response to: Dunning J. How about an honorable mention for cervical and thoracic thrust manipulation? A passing mention would be more appropriate

I would like to commend Dr Chad Cook for his editorial '*How about a little love for non-thrust manipulation?*'.¹ The invited responses² illustrate the breadth of debate on the issue and highlight that the controversies surrounding the use of neck manipulation remain alive. Of these responses the plea by Dunning for '*an honorable mention for cervical and thoracic thrust manipulation*' discusses evidence from trials published after the most recent Cochrane review³ on the topic and suggests that the new evidence warrants re-evaluation of the relative benefits of manipulation and mobilization. The case for an 'honorable mention' is built primarily on overstating the significance of Dunning's recently published trial.⁴

Dunning's trial compared the very short term outcomes (pain, disability and impairment at 48 hours) of combined cervical and thoracic manipulation with combined cervical and thoracic spine mobilization in participants with neck pain of average duration of 12 months. Dunning suggests that his results contradict previous findings including those of our trial.⁵ Given that Dunning's study compared different interventions to ours (cervical and thoracic manipulation), delivered under different conditions (prescriptive rather than pragmatic), in different patients (our participants were only included if judged suitable candidates for manipulation) at different stages of their course of treatment (our patients were randomised at the time that the practitioner judged that neck manipulation was appropriate) at different stage of their neck pain condition (chronic rather than a new episode), and investigated different outcomes, it would be fair to say that rather than contradicting previous results, Dunning's results add to body evidence about the relative efficacy of mobilisation and manipulation for neck pain... slightly.

Because Dunning *et al.*⁴ did not follow recommendations from the World Health Organization that clinical trials be registered, it is unclear to what extent the reported methods and results were pre-specified. Our trial⁵ was prospectively registered, with a full protocol published, and was designed against the

background of the controversy surrounding the practice of neck manipulation. The question posed was whether the risk of neurovascular injury associated with neck manipulation was outweighed by neck manipulation being a superior treatment to safer non-thrust mobilization techniques. Practitioners use a wide range of manual therapy techniques, with treatment selection and dosage often guided by manual assessment findings, and often in conjunction with other interventions. Manipulation is also frequently used as a means of progressing manual therapy treatment. The pragmatic aspects of the design of our trial including allowing practitioner choice over selection of suitable participants, timing of randomisation and application of interventions were aspects of our trial design ensured that the interventions were tested in circumstances that most closely matched clinical practice. These factors strengthen the clinical applicability of our results.

A more prescriptive approach to the delivery of interventions such as the one used by Dunning can have the advantages of being easier to replicate in a study or easier to reproduce the exact interventions in the clinic, but does not necessarily ensure that the study address the right question. The prescriptive approach to delivery of interventions is not without problem, particularly for interventions in which there is little data or even consensus about what constitutes appropriate dosage. The choice of mobilization technique for the control intervention by Dunning and colleagues would be considered by many manual therapists to be an inadequate control. The control intervention, was 30 seconds of posteroanterior mobilisation at C1/2 and T12 reportedly 'as described by Maitland' but ironically applied in a prescriptive manner most unlike the approach developed by the late Geoffrey Maitland.⁶ Dunning described the careful attention paid to controlling for contact or attention effect for the mobilization intervention by minimizing the duration of the mobilisation treatment. This would make some sense in a study of therapeutic mechanisms. It makes less sense in a study of clinical outcomes to

deliberately attempt to minimise the non-specific interactional effects of the control. In doing so the control intervention bears little resemblance to the way that mobilization is delivered in clinical practice. One would also expect if the mobilisation intervention was modified to minimise non-specific interactional effects that some attempt should have been made to control for theatrics and mystique of manipulation.

Both our study and that of Dunning were published after the most recent Cochrane review and add to the existing evidence about the relative effectiveness of manipulation and mobilization. Our study demonstrated that the addition of neck manipulation to other evidence-based care did not lead to faster or more complete recovery than mobilization in patients with a new episode of neck pain. Dunning's results do not contradict these findings. Rather, Dunning's results demonstrate, not surprisingly that combined cervical and thoracic manipulation result in better outcomes at very short term follow-up than 30 seconds of grade IV posteroanterior pressures applied over C1/2 and T1/2 in patient with chronic neck pain. Any manual therapist who routinely applies mobilization in this way, at this dosage for neck pain would be well advised on the basis of this study to perhaps try something else. Not answered by Dunning's study is whether the outcomes of these treatments are any different in a more clinically relevant timeframe, nor whether the addition of the higher risk upper cervical manipulation

is a necessary component of this treatment. The short term effects of thoracic manipulation alone have previously been demonstrated,⁷ and perhaps the honorable mention should be reserved for the lower risk thoracic spine manipulation techniques.

Andrew M Leaver

The University of Sydney, Sydney, NSW, Australia

Christopher G Maher

The George Institute for Global Health, Sydney, NSW, Australia

References

- 1 Cook C. How about a little love for non-thrust manipulation? *J Man Manip Ther.* 2012;20:1–2.
- 2 Cook C. In response to: Cook C. How about a little love for non-thrust manipulation? *J Man Manip Ther.* 2012;20:102–8.
- 3 Gross A, Miller J, D'Sylva J, Burnie SJ, Goldsmith CH, Graham N, *et al.* Manipulation or mobilization for neck pain: a Cochrane Review. *Man Ther.* 2010;15:315–33.
- 4 Dunning JR, Cleland JA, Waldrop MA, Arnot CF, Young IA, Turner M, *et al.* Upper cervical and upper thoracic thrust manipulation versus nonthrust mobilization in patients with mechanical neck pain: a multicenter randomized clinical trial. *J Orthop Sports Phys Ther.* 2012;42:5–18.
- 5 Leaver AM, Maher CG, Herbert RD, Latimer J, McAuley JH, Jull G, *et al.* A randomized controlled trial comparing manipulation with mobilization for recent onset neck pain. *Arch Phys Med Rehabil.* 2010;91:1313–8.
- 6 Maitland GD. *Vertebral Manipulation.* 5th ed. London: Butterworth & Co; 1986.
- 7 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;87:431–40.