

# Manual Therapy Research Review

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## Welcome

Welcome to the first edition of the Manual Therapy research review. The intention of this and subsequent publications is to provide a short summary and commentary of relevant research in the area of manual and manipulative therapy useful to clinicians, teachers and researchers of manual therapy. In future I will be looking for invited commentaries from key manual therapists across the world.

About the author: Dr Duncan Reid is a manipulative physiotherapist with 30 years of clinical experience. He is the current Vice President of International Federation of Orthopaedic Manipulative Physical Therapists (IFOMPT). He is an Associate Professor of Physiotherapy and Associate Dean of Health at Auckland University of Technology, New Zealand. This publication is a part of Duncan's portfolio of research on the IFOMPT executive.



## Effectiveness of manual physical therapy in the treatment of cervical radiculopathy: a systematic review

**Authors:** Boyles, R., Toy, P., Mellon, Jr., Hayes, M., Hammer, B

**Study Design:** Systematic review of randomized clinical trials.

**Objective:** Review of current literature regarding the effectiveness of manual therapy in the treatment of cervical radiculopathy.

**Summary:** Cervical radiculopathy (CR) is a common clinical condition with an incidence 83.2 per 100 000. Manual therapy is often applied in the management but the current effectiveness of this intervention is unknown. This review undertook a comprehensive data base search was undertaken and the relevant paper rated for methodological quality using the PEDro scoring system. Four relevant studies were found. No definitive treatment progression were identified in the review but manual therapy offers benefit in this condition.

### Commentary

*Cervical Radiculopathy (CR) is a challenging condition to treat. This systematic review is the first to address the specific issue of the effectiveness of manual therapy in the treatment of CR. As with many systematic reviews the methodological quality of the reviewed studies was not high and there were a small number of studies reviewed(4). However studies that were included were specific to physical therapists delivering the intervention not other professions such as chiropractors. The results do indicate that applying manual therapy to the neck and upper thoracic spine along with therapeutic exercise is effective at restoring function, range of motion and reducing disability. In one of the reviewed studies this was seen as equally effective as surgery. Clinicians treating this condition would assist further researchers by recording and informing which specific manual therapy interventions have the most beneficial effect as often this treatment variation makes comparisons of effectiveness a challenge.*  
Source: Journal of Manual and Manipulative Therapy 2011; 19(3): 135-142.

## Clinical prediction rules in the physiotherapy management of low back pain: A systematic review.

**Authors** Haskins, R., Rivett, D., and Osmotherly, P

**Objective:** To identify, appraise and determine the clinical readiness of diagnostic, prescriptive and prognostic Clinical Prediction Rules (CPRs) in the physiotherapy management of Low Back Pain (LBP).

**Summary:** Clinical Prediction rules for the management of LBP have not been appraised using a systematic review approach. This review investigated the diagnostic, prescriptive and prognostic studies investigating CPRs at any stage of their development, derivation, validation, or impact-analysis. Two independent reviewers identified the relevant studies extracted the key variables and rated the studies using a validated tool. A total of 25 unique CPRs were identified, including 15 diagnostic, 7 prescriptive and 3 prognostic rules. The majority (65%) of studies described the initial derivation of one or more CPRs. As further work is required in this area the authors concluded that the current body of evidence does not enable confident direct clinical application of any of the identified CPRs.

### **Commentary**

*Clinical prediction rules (CPR) have grown in popularity with the physiotherapy profession in recent years even though a large number have been developed in the medical area particularly in the Emergency and Intensive Care areas. This review investigated CPR's in the management of low back pain. A large number of studies were identified with 23 being reviewed. It would seem that at this stage physiotherapists have developed a number of useful CPR's in the area of diagnostics, prognostics and treatment of LBP but they have not been consistently subjected to validation in clinical trials to determine their effectiveness. They have also been somewhat narrow in their focus and need to be broadened to a wider range of LBP conditions. Therefore at this time the authors of this review feel the direct clinical application of the CPR's in LBP is not supported by the evidence at this time. From a clinician perspective I look forward to further work in this area as the factors identified in these CPR's often reflect the intuitive decisions we make each day as to why to do what we do.*

Source: Journal of Manual Therapy, 2012 Vol 17 9-21

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## Distribution of cavitations as identified with accelerometry during lumbar spinal manipulation

**Authors:** Cramer, G., Ross, K., DC, Raju, P., et al

**Objective:** This project determined the location and distribution of cavitations (producing vibrations and audible sounds) in the lumbar zygapophyseal (Z) joints that were targeted by spinal manipulative therapy (SMT).

**Summary:** Forty healthy subjects were randomly allocated to a Spinal Manipulative Therapy (SMT) group and a side lying posture position group. Accelerometers were accurately placed (identified placement with MRI) on the spinous processes of L1 –S2. Accelerometer readings were taken in the resting posture for both groups and then following the HVT for the SMT group. An experienced chiropractor delivered the HVT to the relevant levels. The results indicated that 93.5% of the cavitations occurred on the upside of SMT subjects in segments within the target area (71.7%). Multiple cavitations from the same Z joints also occurred. There was a 30% cavitation rate found in the side posture group.

### **Commentary**

*This chiropractic study is useful to those clinicians who employ HVT to the lumbar region. The study demonstrated not only that cavitation occurs on the upper most side but that it can be targeted to specific joints and that multiple cavitations can occur in one joint. This adds to similar research in the area by physiotherapy colleagues (Cleland et al J Man Manip Ther 2007;15:143-54 Flynn et al . J Manipulative Physiol Ther 2006;29:40-5 and Flynn al Arch Phys Med Rehabil 2003;84:1057-60). This study is useful as it developed a robust measurement tool that will be useful to apply to those with LBP to see the effect of the cavitation and also was more consistent in the measurement rather than relying on the clinicians hearing the sound of cavitation as a marker of success.*

Source: Journal of Manipulative and Physiological Therapeutics, 2011;34:572-583

## Upcoming Conference

### IFOMPT 2012 : Rendez-vous of Hands and Minds

An opportunity not to be missed! For the first time in its history, IFOMPT is hosting its World Congress of Manual/ Musculoskeletal Physiotherapy in Eastern Canada. This meeting is the venue for the very best and brightest in research, clinical practice and academics to come together- and you can be there too! This Conference of the Federation is held only once every 4 years and will include clinical and scientific sessions.

September 30th – October 5th, 2012 Quebec, Canada

For further information: <http://www.ifomptconference.org/#>



## Upper cervical and upper thoracic manipulation versus non thrust mobilisation in patients with mechanical neck pain: a multicenter randomised clinical trial.

**Authors:** Dunning, J., Cleland, J., Waldrop, M., Arnot, C., Young, I., Turner, M., and Sigurdsson, G

**Objective:** To compare the short-term effects of upper cervical and upper thoracic high-velocity low-amplitude (HVLA) thrust manipulation to non-thrust mobilization in patients with neck pain.

**Summary:** This is the first study to compare the effects of manipulation versus mobilisation to the upper thoracic and upper cervical spine in a group of mechanical neck pain patients. One hundred seven patients were randomly allocated to either the HVLA group or the mobilisation group. Patients received one treatment session and were assessed 48 hours later. The main outcome measures used were the Neck Disability Index, Cervical range of motion, the cranio-cervical flexion test and the numeric pain rating scale. The main findings of the study were a greater improvement in the measured variables for the HVLA group than the mobilisation group.

### **Commentary**

*This study will be of importance to clinicians within the IFOMPT MO's. There has been significant controversy over the safety and effectiveness of upper cervical manipulation for the management of neck pain. This well designed and methodologically sound RCT investigates the effectiveness of HVT to C1/C2 and T1/T2 compared to non thrust mobilisation to the same areas for a group of mechanical neck pain patients of varying pain durations. This was a single intervention with a 48 hour follow up indicating a very short intervention period. However the results indicated significant improvements in range of motion, motor control patient disability and global rating of change in the HVT group compared to the non thrust group. No major adverse events were experienced by participants. Interestingly pre screening for VBI issues with physical testing were not used but screening questions on cervical vascular disease were utilised. The decision not to use pre screening physical tests and pre manipulative tests was based on the current lack of consistent guidance in the literature. However this paper reflects key issues in clinical practice and is a positive result in the face of other recent studies also comparing HVT with mobilisation in patients with neck pain (Leaver et al A randomized controlled trial comparing manipulation with mobilization for recent onset neck pain. Arch Phys Med Rehabil. (2010);91:1313-1318. <http://dx.doi.org/10.1016/j.apmr.2010.06.006>.) This study found no difference in the outcomes between HVT and mobilisation*

Source: Journal of Orthopaedic and Sports Physical Therapy, 2012;42(1):5-18, Epub 30 September 2011. doi:10.2519/jospt.2012.3894

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### Interested in contributing?

If you would like to make any contributions to the Manual Therapy Research Review please contact Dr Duncan Reid on [duncan.reid@aut.ac.nz](mailto:duncan.reid@aut.ac.nz)

For further information on IFOMPT please visit our website [www.ifompt.org](http://www.ifompt.org)

