

Manual Therapy for Post-Concussion Syndrome

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Objectives

- ▶ Discuss evidence for manual therapy in patients with symptoms of headache, dizziness, oculomotor impairments and neck pain
- ▶ Learn and practice manual techniques
- ▶ Discuss integration of manual therapy evaluation and treatment of patients following concussion

Evaluation



Available online at www.sciencedirect.com

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Manual Therapy 13 (2008) 2–11

Masterclass

Sensorimotor disturbances in neck disorders affecting postural stability, head and eye movement control

Julia Treleaven*

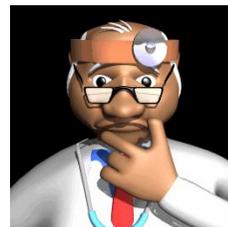
Neck Pain and Whiplash Research Unit, Division of Physiotherapy, University of Queensland, Brisbane, Qld 4072, Australia
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MANUAL
THERAPY

www.elsevier.com/locate/math

Evaluation

- ▶ Cervical ROM
- ▶ Cervical Joint Position Sense
- ▶ Oculomotor
 - Gaze Stability
 - Eye Follow
 - Saccades
 - Eye-Head Coordination
- ▶ Postural Stability
 - Balance



Evaluation

- ▶ Cervical Spine ROM
- ▶ Inclinometer
 - ▶ Interrater Reliability 0.88–0.96
 - ▶ MDC 5–10°



Fletcher and Bandy, JOSPT 38(10), 2008.

Evaluation



- ▶ 90 cm from wall
- ▶ Mark starting point
- ▶ Eyes Closed
- ▶ Active Motion and return to starting point
- ▶ ABNormal: >4–5 cm (1.5–2 inches)

Cervical Joint Position Sense

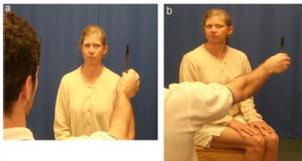
Evaluation

- ▶ Eyes focus on target
- ▶ Active cervical motion
- ▶ ABNormal
 - Sx reproduction
 - Inability to focus
 - Reduced or awkward motion



Gaze Stability

Evaluation



- ▶ Eyes follow moving target
- ▶ No cervical motion
- ▶ Neutral and torsion
- ▶ ABNormal
 - Sx reproduction
 - Interrupted movement

Eye Follow

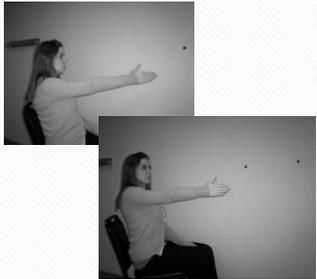
Evaluation

- ▶ Rapid Eye movement to a changed point of fixation
- ▶ ABNormal:
 - Difficulty following or fixating on the target
 - Symptom reproduction



Saccadic Motion

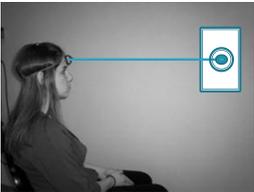
Evaluation



- ▶ Patient moves eyes first to a target and then head
- ▶ ABNormal:
 - Difficulty with focus
 - Sx reproduction

Eye/Head Coordination

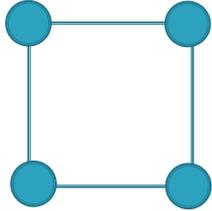
Evaluation



- ▶ Measurable Objective Findings
- ▶ Test-ReTest Model

Evaluation

Gaze Stability

Saccadic Eye Motion



Manual Therapy

WHAT'S THE EVIDENCE?

Evidence

Manual Therapy 15(2010) 35–333

Contents lists available at ScienceDirect

Manual Therapy

ELSEVIER

Journal homepage: www.elsevier.com/locate/math

Systematic review

Manipulation or mobilisation for neck pain: A Cochrane Review¹

Anita Gross^{a,*}, Jordan Miller^a, Jonathan D'Sylva^a, Stephen J. Burnie^b, Charles H. Goldsmith^c, Nadine Graham^a, Ted Haines^c, Gert Bronfort^d, Jan L. Hoving^e, COG¹

► **Conclusions**

- Cervical manipulation produces similar pain relief, functional improvements and patient satisfaction as mobilization
- Manipulation may provide short-term but not long-term pain relief
- Thoracic manipulation used alone or in combination may improve pain and function

Techniques

- Occipital–Atlantal Muscle Energy Technique
 - OA flexion, then sidebend
 - Pressure exerted by the therapist in a flexion–rotational direction
 - Patient instructed to look in the direction opposite of rotational force.

Techniques

- C2 Lateral Flexion Muscle Energy Technique
 - Cervical spine in neutral
 - Patient is instructed to resist with matching force
 - Apply sidebending force to cranium and atlas

Technique

- Cervical Lateral Glide
 - MTP on articular process
 - Down glide with contact hand
 - sidebending with stabilizing hand

Evidence

Manual Therapy 15 (2010) 140-153

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Original Article

Cervical lateral glide increases nociceptive flexion reflex threshold but not pressure or thermal pain thresholds in chronic whiplash associated disorders: A pilot randomised controlled trial[®]

Michele Sterling^{a,b,*}, Ashley Pedler^b, Clifton Chan^b, Madonna Puglisi^b, Viana Vuvan^b, Bill Vicenzino^b

TMJ Intervention

Technique

- ▶ Intraoral TMJ Distraction
 - Thumb along molars
 - Fingers grip jaw
 - Distraction applied in a scooping motion

Technique

- ▶ Sidelying TMJ Mobilization
 - Thumbs placed on mandibular condyle
 - Apply medial glide

Evidence

- ▶ Conclusion
 - SNAGs are a safe and effective technique
 - Clinically and statistically significant immediate and sustained effect in reducing dizziness, neck pain and disability

Available online at www.sciencedirect.com

ScienceDirect

Manual Therapy 13 (2008) 357-366

Original article

Sustained natural apophyseal glides (SNAGs) are an effective treatment for cervicogenic dizziness

Susan A. Reid^a, Darren A. Rivett, Michael G. Katekar, Robin Callister

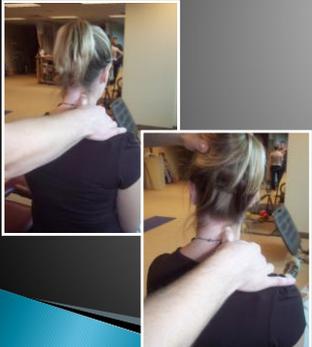
School of Biomedical Sciences, Faculty of Health, The University of Newcastle, Callaghan, NSW 2308, Australia

Received 2 June 2006; received in revised form 2 February 2007; accepted 11 March 2007

Techniques

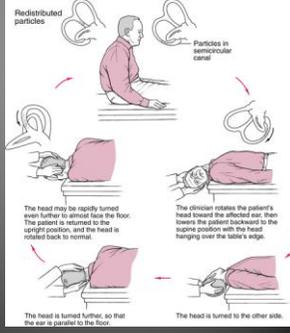
- ▶ Mulligan SNAG (extension)
 - Discover offending motion
 - Patient is seated, PT applies glide
 - Patient moves in offending direction
 - Motion should be symptom free

Techniques



- ▶ Mulligan SNAG Rotation
 - Rotary Glide applied to C1
- ▶ ****Note****
 - If no effect on symptoms, glide may be attempted at lower levels

Technique



- ▶ Epley Maneuver
 - Studies report 80–92% success rates in treating BPPV

Evidence



Manual Therapy (2000) 5(3), 151–157
 © 2000 Harcourt Publishers Ltd
 doi:10.1054/muth.2000.0357, available online at <http://www.elsevier.com> on **ScienceDirect**

Original article

Effects of acupuncture, cervical manipulation and NSAID therapy on dizziness and impaired head repositioning of suspected cervical origin: a pilot study

H. Heikkilä, M. Johansson, B.-I. Wenngren
 Department of Otorhinolaryngology, Northern Sweden University Hospital, Umeå, Sweden

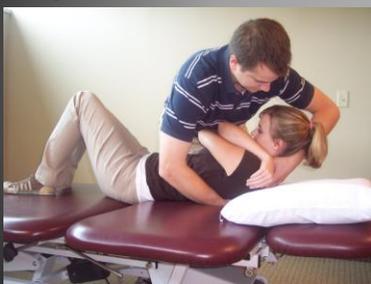
- ▶ **Outcomes**
 - Manipulation and acupuncture resulted in the best change in relocation ability
 - Manipulation was the only intervention that significantly decreased frequency, intensity and duration of dizziness

Technique

- ▶ Cervicothoracic Distraction Manipulation



Technique



- ▶ Mid-Thoracic Manipulation

Integration



- ▶ What Technique?
 - Techniques are chosen based upon history
 - Pick 1 asterisk sign and measure objectively
 - Apply 1 manual therapy intervention
 - Re-assess