



THE TREATMENT OF CERVICOGENIC DIZZINESS AND PAIN WITH SUSTAINED NATURAL APOPHYSEAL GLIDES (SNAGS): A RANDOMIZED CONTROLLED TRIAL

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Purpose

- To determine the efficacy of SNAGs in the treatment of cervicogenic dizziness, pain and disability
- To provide scientific evidence for the treatment of cervicogenic dizziness



Definition of cervicogenic dizziness

Dizziness:

- described as imbalance, disequilibrium or unsteadiness (**not** rotatory vertigo)

AND

- related to either movements or positions of the cervical spine, or occurring with a stiff or painful neck



SNAGs

- Sustained accessory glide combined with active movement
- Mulligan (1991) proposed as treatment for cervical 'vertigo'
- Nil research but recommended clinically (Exelby 2002, Grieve 1991, Wilson 1996)
- Systematic review found limited evidence for manual therapy in treatment of cervicogenic dizziness (Reid & Rivett 2005)



Participants

- Thirty-four participants with cervicogenic dizziness (and usually cervical pain)
- Recruited by referral from Neurologists and a press release
- Diagnosis of exclusion by neurologist
- Chronic dizziness (> 3 months)



Method

- Prospective, double-blind randomized, controlled trial
- Randomized to receive SNAG manual therapy (n=17) or a placebo (detuned laser) (n=17)



Primary outcome measures

- Dizziness Handicap Inventory (DHI)
- Dizziness severity (VAS)
- Frequency of dizziness
- Neck pain/headache severity (VAS)
- Global perceived effect



Secondary outcome measures

- Cervical range of motion
- Posturography/balance (sway index)



Posturography
(Chattecx balance system)



SNAG treatment

As per Mulligan (1999)

Used physiological movement or position causing dizziness:

- Extension/flexion: anterior glide to C2 spinous process
- Rotation: anterior glide to ipsilateral C1 transverse process. If no relief, contralateral transverse process.
- Treatment is symptom-free



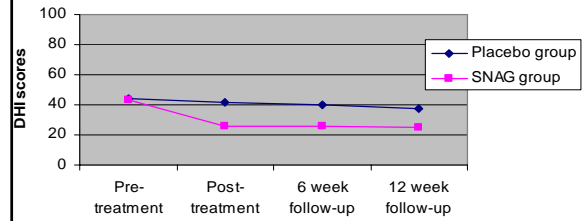
Intervention

- 4-6 treatments over four weeks
- SNAG treatment was progressed by increasing number of reps, sustaining SNAG, or adding a second indicated SNAG as per clinical reasoning
- Assessments pre-treatment, post-treatment, 6 & 12 weeks
- Assessments administered by blinded assistant

Analysis

- Two-way repeated measures analysis of variance
- Each group evaluated over time for each outcome
- Two study groups compared at each assessment point using independent two-sample T-tests with equal variance

DHI



- SNAG group lower scores post-treatment ($p < 0.001$), at 6 wk ($p < 0.001$), and 12 wk ($p < 0.001$). Placebo group: lower at 12 wk ($p = 0.01$)
- 47% improvement in SNAG group at 12 weeks; 15% for placebo group
- SNAG group lower scores than placebo group post-treatment ($p = 0.02$) and at 6 weeks ($p = 0.05$)

DHI

Pre-treatment (both grps):

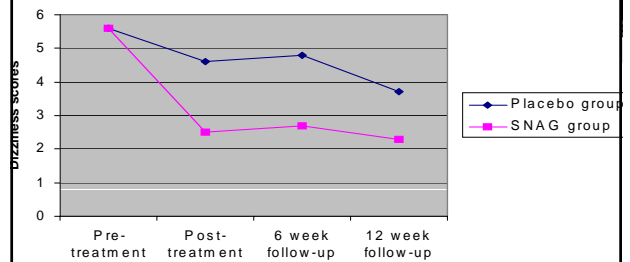
30 % of participants reported mild handicap (scoring 0-30 on DHI), 53 % moderate (score 31-60) and 17% severe (score 61-100).

Post-treatment:

SNAG group 68% of participants reported mild handicap, 32% moderate and none severe.

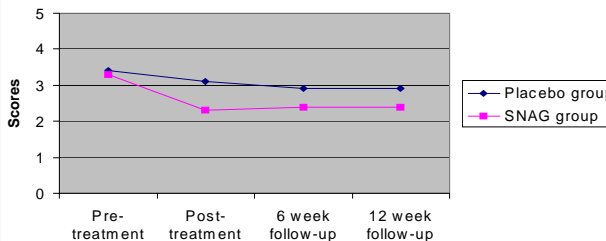
Placebo group 22% reported mild, 66% moderate and 12% severe handicap

VAS dizziness



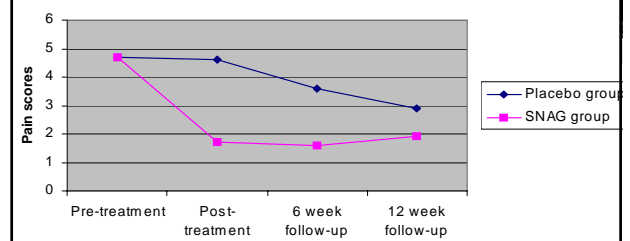
- SNAG group lower scores post-treatment ($p = 0.001$), at 6 wk ($p < 0.001$) and 12 wk ($p < 0.001$). Placebo: lower scores at 12 wk ($p < 0.02$)
- 61% improvement in SNAG group at 12wks; 16% placebo group
- SNAG group lower scores than placebo group post-treatment ($p = 0.03$) and at 6 weeks ($p = 0.03$)

Frequency of dizziness

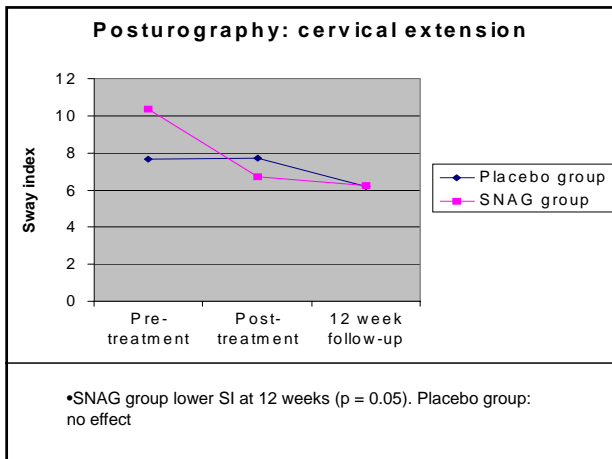


- 48 % had dizziness daily
- SNAG group lower scores post-treatment ($p = 0.03$), at 6 weeks ($p = 0.03$) and 12 weeks ($p = 0.03$)
- Placebo group had no significant change

VAS pain



- SNAG group lower pain scores post-treatment ($p < 0.001$), at 6 weeks ($p = 0.001$) and 12 weeks ($p = 0.01$). Placebo group no change
- SNAG group lower scores than placebo group post-treatment ($p = 0.001$) and at 6 weeks ($p = 0.048$)
- SNAG group had 65% decrease in pain post-treatment (28% is considered a clinically significant change [Mannion et al. 1999])



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Conclusions

SNAGs were shown to:

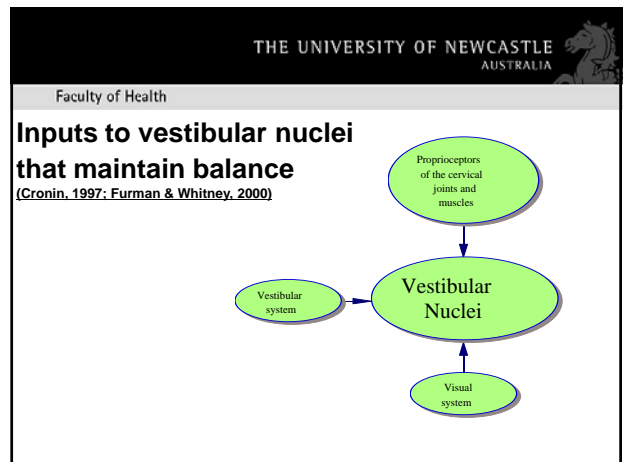
- have a clinically and statistically significant effect
- have an immediate and sustained effect
- reduce dizziness, cervical pain and disability caused by cervical spine dysfunction

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Clinical Implications

- Evidence for existence of cervicogenic dizziness
- Identification of people with this condition
- Scientific evidence for effectiveness of SNAGs in treatment
- A new evidence-based treatment option for people with this disabling condition
- Possible mechanism of action

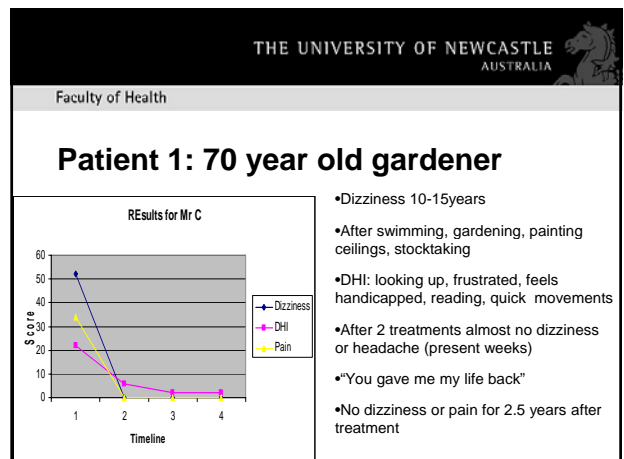


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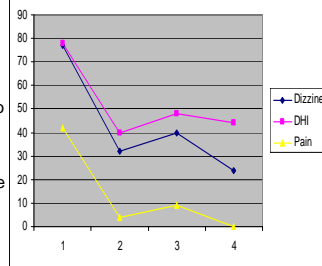
Future research

- To evaluate the long-term effects of SNAGs and Self-SNAGs in reducing symptoms of chronic cervicogenic dizziness and pain
- To compare SNAGs to Maitland passive cervical joint mobilizations
- To compare the cost-effectiveness
- To assess any adverse effects
- To measure changes in the ability to reposition the head in space.



Patient 2: 76 year old lady

- Felt off balance "would fall over"
- 7 year history been to St Vincents, had ear surgery
- DHI: Felt frustrated, restricts travel, restricted social activities, wouldn't go for a walk or leave the house, felt depressed, stress with family
- Post T: could go for a walk, leave the house alone, less stress, less depression, less handicap

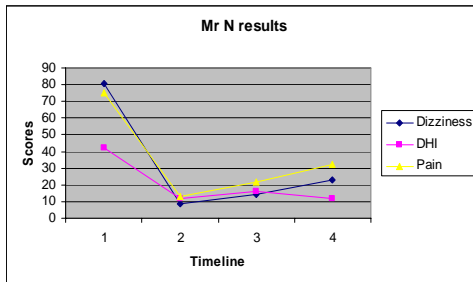


Patient 3: 76 year old kayaker

- World long distance kayak record; 50km 3/wk
- Turn to right falls out of kayak; sold kayak
- 30years stiff, painful neck
- Post treatment "fantastic" only occasional dizziness, returned to sport TK1



Mr N results



Acknowledgements

- Brian Mulligan
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- The University of Newcastle
- Brawn Scholarship

'Physiotherapy gets more exciting as the years pass'.

Brian Mulligan 1991