

Brief Report



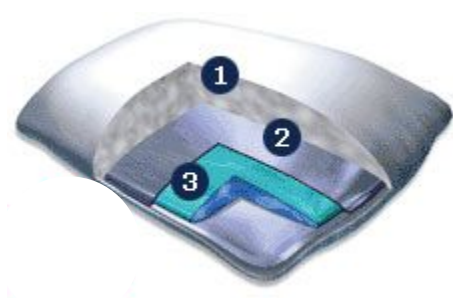
Mediflow® water pillow

Reviewer	Amanda Bowens
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Please note: this brief report summarises information on the Mediflow® water pillow. It has not been systematically developed according to a predefined methodology. It is not intended to replace clinical judgement or to be used as a clinical protocol.

Background

The Evidence Based Healthcare Advisory Group has been asked to comment on the effectiveness of the Mediflow® water pillow^a. The request came from a Branch Medical Advisor after a medical specialist recommended that ACC purchase a water pillow for a claimant who had suffered a back injury.



The Mediflow® water pillow (also known as the Chiroflow water pillow), left, has a water-filled base (3) protected by thermal insulation (2) and covered with a polyester outer layer (1). The user fills the base from the tap and can adjust the volume of water to customise the firmness of the support provided. The pillow is intended to provide neck support and improve quality of sleep for people with chronic neck problems. In New Zealand it retails for about NZ\$120 including GST^b.

Methods

To identify literature about this product (or similar products), a range of medical, nursing, allied health and evidence based medicine databases was searched on 1 May 2007 using the search terms “*water pillow*”, “*therapeutic pillow*”, “*Mediflow*” and “*Chiroflow*”. The manufacturer’s website was also checked for details of supporting literature.

^a See www.waterpillow.co.uk/ for product information.

^b According to www.physiosupplies.com.au/acatalog/Mediflow_Water_Pillow.html, checked 3 May 2007.

Results

The literature search found four published papers and two unpublished conference presentations on the Mediflow® water pillow that were relevant to the request. The papers and their findings are summarised in the following table:

<i>Citation</i>	<i>Description</i>	<i>Findings and comments</i>
Lavin R. et al. (1997). Cervical pain: a comparison of three pillows ¹	5-week randomised crossover trial involving 41 subjects with benign neck pain of at least one month's duration.	The Mediflow water pillow was associated with improved quality of sleep, reduced morning pain intensity ^c , increased pain relief and higher patient satisfaction compared to a cylindrical roll pillow and the subject's normal pillow. The study was sponsored by Mediflow Water Pillow Ltd. Fifteen subjects dropped out at various stages of the trial.
Monaghan H. (1998). Water based pillows reduced pain and improved sleep and disability in patients with cervical pain ²	Summary and brief commentary on the crossover trial by Lavin et al. (above).	Noted that the use of a variety of outcome assessment tools reduced the potential for subjectivity, but acknowledged the Mediflow sponsorship and the possibility of bias towards the water and roll pillows. Overall conclusion: "In an area where little work has been done, this is a good introductory study".
Shields N. et al. (2006). Are cervical pillows effective in reducing neck pain? ³	Systematic review of 5 research studies including the crossover trial by Lavin et al. (above).	The review concluded that all 5 studies were of low quality and there was therefore insufficient evidence to establish whether cervical pillows reduce chronic neck pain. The Lavin study was graded 3 on the 10-point PEDro scale ⁴ . It scored poorly due to the high rate of drop-outs and non-compliance, and because the data was not analysed by intention-to-treat.
Stage C. (1997). A product review of the Mediflow® Waterbase® pillow ⁵	Subjective, non-controlled review from the perspective of a tester with a 15-year history of moderate-severe neck pain due to "a pinched nerve which flares up..." during sleep on average 3-4 times per month.	During 3 weeks of using the pillow, the tester experienced one pinched nerve episode of lesser severity than usual. He felt the pillow improved his sleep quality & recommended it as a complementary treatment for neck problems. He experienced some minor problems with noise & temperature control.
Logan College of Chiropractic (1996). Chronic neck pain findings (unpublished) ⁶	Presentation at the International Conference on Spinal Manipulation, 1996 (<i>brief details only – no mention of a control group or control treatment</i>).	Use of a Mediflow® Waterbase® pillow in conjunction with chiropractic care resulted in a reduction in neck pain and disability, and improved quality of sleep, in subjects with chronic neck pain.
Logan College of Chiropractic (1996). Quality of sleep findings (unpublished) ⁷	Poster presentation at the Conference of Chiropractic Research and Education, June 1996 (<i>brief details only – no mention of a control group or control treatment</i>).	In a survey of students, faculty & staff at a chiropractic college, over 68% said their quality of sleep improved after using the Mediflow pillow. Over 84% rated the pillow 8 or better on a point scale from 1 to 10, with 10 being the highest level of satisfaction.

^c Average morning pain intensity score on visual analogue scale was 3.75±0.36 for the water pillow, versus 4.67±0.46 for the roll pillow ($p<.005$) and 4.83±0.42 for the standard pillow ($p<.025$).

Discussion

The paper by Lavin et al.¹ is highlighted as it appears to be the only published, controlled experimental study to date on the effectiveness of the Mediflow® water pillow that is relevant to the request. The paper suggests that the product may reduce pain and improve quality of sleep in subjects with chronic neck pain. However, the study was flawed due to the number of participants who dropped out at various stages of the crossover or who did not comply with the data collection protocol.

In addition, there is weak evidence from anecdotal and unpublished accounts that the Mediflow® water pillow: (1) reduces pain and improves quality of sleep in subjects with chronic neck problems^{5,6} (in conjunction with chiropractic treatment in the latter study); and (2) improves quality of sleep in a non-clinical population.⁷

Conclusions

High quality published research on the use of the Mediflow® water pillow is lacking. It is therefore difficult to assess the product's effectiveness due to the lack of relevant studies.

There is weak evidence from a low quality study and from anecdotal and unpublished accounts that the Mediflow® water pillow may reduce pain and improve quality of sleep in persons with chronic neck problems.

However, no literature was identified on the use of the product by patients with back pain or back injuries (the focus of the original request).

References

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3. Shields N, Capper J, Polak T, Taylor N. Are cervical pillows effective in reducing neck pain? *New Zealand Journal of Physiotherapy* 2006;34(1):3-9.
4. Maher C, Sherrington C, Herbert R, Moseley A, Elkins M. Reliability of the PEDro scale for rating quality of randomized controlled trials. *Physical Therapy* 2003;83:713-21.
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7. Logan College of Chiropractic. Quality of sleep findings (poster presentation). *Conference of Chiropractic Research and Education*. San Diego, USA, 1996.