

Can exercise improve symptoms and outcomes in individuals with acute or chronic whiplash-associated disorder (WAD)?

To answer this question, we performed a comprehensive search of the PubMed database (October 2011) for randomized, controlled trials and systematic reviews that addressed this specific research question.

Four randomized controlled trials (1-4) and two literature reviews (5,6) were summarized.

Three studies evaluated the effect of physical therapy and/or exercise among patients with chronic (grades I-III) WAD, with two finding a significant benefit. Among 71 patients with WAD, Jull et al compared 10 wks of physical therapy (home exercise, manipulation and education) to self-management (home exercise and education), and found therapy resulted in significantly greater improvement in pain and function (1). Unfortunately, due to the study design, it is not clear which component of therapy is most effective for patients with WAD. Stewart et al also found a significant effect of 6 wks of exercise and advice compared to advice alone on improving pain and

function among 134 patients with chronic WAD; however long term follow-up showed no effect of treatment (2). Of note, 15% and 23% of the exercise and advice groups, respectively, reported seeking outside treatment during the intervention (2). In contrast, among 213 patients with chronic WAD grade II, Vickne et al found no benefit of adding stabilizing exercises using a ceiling-mounted sling to 4 mos of physical therapy and home exercise; extending the home exercise to one yr also had a minimal effect (3). Limitations of this study included lack of compliance monitoring and the possible influence of subjects' unsettled compensation claims (3).

For acute whiplash injury (grades I-II), Vassiliou et al established that active exercises and physical therapy modalities (e.g., heat, massage) were more effective than standard treatment with a soft collar in reducing pain and disability after both 6 wks and 6 mos (4). A limitation of this study was a high dropout rate, particularly in the standard treatment group.

Based on this review, it can be concluded that exercise therapy improves outcomes for patients with whiplash injury; however, the specific type, frequency, and duration of exercise that is most effective is not yet clear.

Check with the provider of this newsletter to learn more about exercises appropriate for this condition.

1. Jull G, Sterling M, Kenardy J, Beller E. Does the presence of sensory hypersensitivity influence outcomes of physical rehabilitation for chronic whiplash?--A preliminary RCT. *Pain*. 2007 May;129(1-2):28-34. Epub 2007 Jan 10. PubMed PMID: 17218057.
2. Stewart MJ, Maher CG, Refshauge KM, Herbert RD, Bogduk N, Nicholas M. Randomized controlled trial of exercise for chronic whiplash-associated disorders. *Pain*. 2007 Mar;128(1-2):59-68. Epub 2006 Oct 9. PubMed PMID: 17029788.
3. Vikne J, Oedegaard A, Laerum E, Ihlebaek C, Kirkesola G. A randomized study of new sling exercise treatment vs traditional physiotherapy for patients with chronic whiplash-associated disorders with unsettled compensation claims. *J Rehabil Med*. 2007 Apr;39(3):252-9. PubMed PMID: 17468795.
4. Vassiliou T, Kaluza G, Putzke C, Wulf H, Schnabel M. Physical therapy and active exercises--an adequate treatment for prevention of late whiplash syndrome? Randomized controlled trial in 200 patients. *Pain*. 2006 Sep;124(1-2):69-76. Epub 2006 May 11. PubMed PMID: 16697113.
5. Teasell RW, McClure JA, Walton D, Pretty J, Salter K, Meyer M, Sequeira K, Death B. A research synthesis of therapeutic interventions for whiplash-associated disorder (WAD): part 2 - interventions for acute WAD. *Pain Res Manag*. 2010 Sep-Oct;15(5):295-304. Review. PubMed PMID: 21038008; PubMed Central PMCID: PMC2975532.
6. Teasell RW, McClure JA, Walton D, Pretty J, Salter K, Meyer M, Sequeira K, Death B. A research synthesis of therapeutic interventions for whiplash-associated disorder (WAD): part 4 - noninvasive interventions for chronic WAD. *Pain Res Manag*. 2010 Sep-Oct;15(5):313-22. Review. PubMed PMID: 21038010; PubMed Central PMCID: PMC2975534.