

Whiplash-associated disorders from a physical therapy and health- economic perspective

*A study of an active physical therapy
involvement and intervention for the treatment
of acute whiplash-associated disorders and an
analysis of its costs and consequences.*

Akademisk avhandling



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av

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Avhandlingen baseras på följande delarbeten:

- I. Seferiadis, A. Rosenfeld, M, and Gunnarsson, R. (2004) A review of treatment interventions in whiplash-associated disorders. *Eur Spine J*
- II. Rosenfeld, M. Gunnarsson, R. and Borenstein, P. (2000) Early intervention in whiplash-associated disorders: a comparison of two treatment protocols. *Spine 25*, 1782-1787.
- III. Rosenfeld, M. Seferiadis, A. Carlsson, J. and Gunnarsson, R. (2003) Active intervention in patients with whiplash-associated disorders improves long-term prognosis: a randomized controlled clinical trial. *Spine 28*, 2491-2498.
- IV. Rosenfeld, M. Seferiadis, A. and Gunnarsson, R. (2006) Active Involvement and Intervention in Patients Exposed to Whiplash Trauma in Automobile Crashes Reduces Costs: A randomised, controlled clinical trial and health economic evaluation. *Spine Journal* In press,

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ABSTRACT

Whiplash-associated disorders (WAD) resulting from a biomechanical event in motor vehicle collisions is a major cause of suffering and high costs to society. The overall aim of this thesis was to evaluate the clinical and cost-effectiveness of an early, active physiotherapy involvement and intervention in patients exposed to neck trauma in motor vehicle crashes compared to a standard intervention which has been common practice in Sweden.

The thesis consists of a review (I) and an interventions study (II-IV). The objective of Paper I was to review the literature systematically to analyse the evidence basis of many commonly used treatments for patients suffering from WAD both in the acute phase and for patients with persistent symptoms. The methodological quality of 26 randomised clinical trials was analyzed. The median quality scores for all three instruments were poor. Based on the degree of evidence and practical considerations, the following treatments can be recommended: Early physical activity in acute WAD, combination of cognitive behavioural therapy with physical therapy interventions, and coordination exercise therapy in chronic WAD. High-quality RCTs are not common in the field of WAD. More research is needed, particularly on the treatment of chronic WAD.

The objective of Paper II was to evaluate an active physical therapy involvement and intervention versus a standard intervention and the importance of early versus delayed onset of treatment. Paper III aimed to compare long-term efficacy of active physical therapy involvement and intervention with standard intervention and the effect of early versus delayed initiation of intervention. The aim of Paper IV was to compare the costs of an active physical therapy involvement and intervention versus a standard intervention and to relate them to the clinical benefits in patients exposed to whiplash trauma in automobile crashes to facilitate decision making regarding intervention and resource allocation. The results of the inter-vention study showed that the active physical therapy involvement and intervention was significantly superior in reducing pain intensity and sick leave. Costs were significantly lower after 6 and 36 months with an active involvement and intervention as compared to the standard intervention. In conclusion, active involvement and intervention is a cost-saving alternative with positive consequences for health compared to a standard intervention in patients exposed to whiplash trauma, when costs related to physical therapy treatment and productivity

were considered. It should thus be considered in the choice of treatment of these patients.

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