

# Shoulderfunction and activity limitations in patients with early rheumatoid arthritis

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av

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- I. Bilberg A, Bremell T, and Mannerkorpi K. (2012). Disability of the Shoulder, Arm and Hand questionnaire in Swedish patients with rheumatoid arthritis: A validity study. *Journal of Rehabilitation Medicine*. 44, 7-11.
- II. Bilberg A, Bremell T, Balogh I, and Mannerkorpi K. Shoulder function is impaired in early Rheumatoid Arthritis- a controlled study. Submitted
- III. Bilberg A, Bremell T, Balogh I and Mannerkorpi K. (2013). Work status in patients with early rheumatoid arthritis; emphasis on mechanical exposure and shoulder function. *Scandinavian Journal of Rheumatology*. In press
- IV. Bilberg A, Ahlmén M, and Mannerkorpi K. (2005) Moderately intensive exercise in a temperate pool for patients with rheumatoid arthritis: randomized controlled study. *Rheumatology*. 44, 502-508

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## ABSTRACT

Patients with rheumatoid arthritis (RA) have impaired physical function which can lead to difficulties with daily activities. Despite improved pharmacological treatment, patients with early RA report difficulties with activities involving the shoulder. There is limited knowledge of the shoulder function and activity limitations related to the shoulder, arm and hand among patients with early RA.

The overall aim of this thesis was to investigate shoulder function and activity limitations related to the shoulder, arm and hand, and the relationship between shoulder function, activity limitations and work ability in patients with early RA. A methodological study evaluated the reliability and validity for the Disability of the Shoulder, Arm and Hand (DASH) questionnaire which assess activity limitations related to the shoulder, arm and hand. A controlled cross-sectional study and a cross-sectional study investigated shoulder function and activity limitations related to the shoulder, arm and hand and the relationship between shoulder function, activity limitations and work ability in patients with early RA. A randomized-controlled study evaluated moderately intensive pool exercise for patients with RA.

Main findings. DASH was found to possess satisfactory reliability and validity to assess activity limitations in patients with early RA. The shoulder function was found to be impaired, in particular the shoulder muscle strength which was 65% of the muscle strength in the reference group. The majority of the patients reported some activity limitations related to the shoulder, arm and hand when compared with the reference group. Impaired work ability is common among patients with early RA and associated with impaired shoulder function, mechanical exposure and activity limitations related to the shoulder, arm and hand. Moderately intensive pool exercise improved muscle function in the upper and lower extremities, active range of motion of the shoulder, activity limitations and well-being in patients with RA, while the aerobic capacity did not improve. Long-term follow-up showed also improved physical and mental quality of life.

Conclusion. Screening and monitoring of shoulder function from disease onset is warranted as the shoulder function is impaired, in particular the shoulder muscle strength. The majority of the patients with early RA report activity limitations related to the shoulder, arm and hand. DASH can be used to monitor the progress of the upper extremity function and activity limitations in patients with RA. Work ability in early RA is associated with shoulder function, mechanical exposure and activity limitations related to the shoulder, arm and hand. Moderately intensive pool exercise can be recommended for improvement of physical function, activity limitations and quality of life for patients with RA.

Keywords: arthritis rheumatoid, activities of daily living, outcome assessment, shoulder, muscle strength, hydrotherapy, exercise, physical fitness, workload

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