

## POSTER

### Health and Self-Esteem

*B. MOTT, S. CAREY. Evaluating the effectiveness of orthoses in adults with rheumatoid arthritis: A systematic review. Gerontechnology 2018;17(Suppl):168s; <https://doi.org/10.4017/gt.2018.17.s.163.00>*

**Purpose** Rheumatoid Arthritis (RA) is the most common type of arthritis, typically affecting patients in their sixties in the form of chronic, systemic, and inflammatory autoimmune disease affecting the synovial membranes of joints<sup>1</sup>. Patients suffering from rheumatoid arthritis are 30% more likely to need assistance with personal care and are 200% more likely to be limited in completing daily activities than healthy patients<sup>2</sup>. Most RA treatment programs focus on reducing inflammation and pain along with maintaining or improving the quality of life of the patients. This includes anti-inflammatory medications along with strengthening exercises in the hopes of maintaining quality of life and preventing surgery<sup>1</sup>. Static orthoses are used for patients who have early signs of RA in their hands and wrists but whose symptoms may not yet require the use of prescription medicine<sup>3</sup>. Dynamic hand-wrist orthoses allow for patients to maintain a proper anatomic position while having the opportunity to maintain limited range of motion<sup>4</sup>. A lack of consensus on the true effectiveness of orthoses on the symptoms of Rheumatoid Arthritis pose challenges to both researchers and clinicians. This systematic review of literature was conducted in order to summarize the evidence pertaining to orthoses used in RA.

**Method** A systematic review of randomized control trials and publications were identified and evaluated based on their merit, study design, key findings, and study limitations. A search of PubMed, Ovid, Health Reference Center Academic, Wiley, SpringerLink, Elsevier and Science Direct was conducted using keywords and major subject headings. A combination of the terms "Rheumatoid Arthritis", "orthoses" and "hand" along with their synonyms (i.e. orthosis, orthotic, etc.) were searched within each of these databases. Initial search results were screened based on publication year (no earlier than 2005) and by title and abstract. The selections were based on whether the study assessed clinical outcomes of patients with Rheumatoid Arthritis in the hands.

**Results & Discussion** Titles and abstracts of 4,152 articles were reviewed and a full text review 153 articles ultimately resulted in 11 articles appropriate for this review. Of these articles 6 were clinical studies and 5 were peer reviews. The clinical studies analysed compared patients with Rheumatoid Arthritis to a control group (either patients with the same diagnosis or healthy individuals) throughout an orthosis-based intervention. Of these pieces of literature reviewed 7 found orthoses to be beneficial in reducing symptoms of RA (used as outcome measures) while 4 found their studies to be inconclusive. The articles evaluated in this review exemplified the wide array of opportunities patients suffering with Rheumatoid Arthritis have when considering nonsurgical interventions. Based on the reviewed literature, it can be concluded that orthoses have a positive effect on certain symptoms of Rheumatoid Arthritis. Symptoms such as swelling, pain, and hand function have been shown to decrease in frequency and severity when a patient uses clinical orthoses in conjunction with therapy.

#### References

1. Stark SD. Magill's Medical Guide 2016
2. Ma VY, Chan L, Carruthers KJ. Incidence, prevalence, costs, and impact on disability of common conditions requiring rehabilitation in the United States: Stroke, spinal cord injury, traumatic brain injury, multiple sclerosis, osteoarthritis, rheumatoid arthritis, limb loss, and back pain. *Archives of Physical Medicine and Rehabilitation* 2014;95(5):986-995
3. Adams J, Hammond A, Burrige J, Cooper C. Static orthoses in the prevention of hand dysfunction in rheumatoid arthritis: A review of the literature. *Musculoskeletal Care* 2005;3(2):85-101
4. Franck JA, Timmermans AAA, Seelen HAM. Effects of a dynamic hand orthosis for functional use of the impaired upper limb in sub-acute stroke patients: A multiple single case experimental design study. *Technology and Disability* 2013;25(3):177-187

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