Hammond A, Prior Y, Jones V, Dooley M, Hough Y, Jacklin A (2015) A Pre-Test Post-test pilot trial of compression gloves in early inflammatory and rheumatoid arthritis. *Rheumatology 54(S1):i111-112. doi:10.1093/rheumatology/kev089.045*

Background:

Compression gloves are increasingly provided by occupational therapists (OTs) to people with rheumatoid arthritis (RA). Gloves are provided to: reduce hand joint pain (day and/or night), swelling and stiffness; and improve hand function. A systematic review identified only four trials (n= 8-24), of poor/moderate quality, indicating glove-wear may lead to small reductions in proximal interphalangeal joint (PIPJ) swelling but effects on hand symptoms and function are unclear. The aim of this study was to evaluate compression gloves' effects on hand symptoms and function, to assist planning a randomised controlled trial.

Methods:

A pre-post-test study was conducted. Participants: were recruited from 10 Rheumatology OT departments; had recent onset inflammatory (IA)/RA, or RA; no steroid injections in 4/52; and no new/changed medication in 12/52, unless recent-onset IA/RA. Participants wore right and/or left Isotoner ¾ finger gloves, day and/or night as required. Assessments at 0 and 4 weeks included: hand pain on activity and at night, hand stiffness (all 0-10 numeric rating scales: none to very severe); swelling (joint circumference: cms); composite finger flexion to distal wrist crease (CFF: cms); Measure of Activity Performance-Hand [MAP-HAND]; Grip Ability Test [GAT]. OTs were trained in assessments: inter-rater reliability (ICC,11) was good: 2nd PIPJ circumference (0.91); CFF (0.76-0.93); GAT (0.98). Data were analysed using paired t-tests and effect sizes calculated using eta-squared (0.14+ = large effect).

Results:

41 participated (early IA/RA = 14; RA = 27): 33 women, 8 men; average age = 59.10 (SD 12.54) years; time since diagnosis 2.33 (IQR 0.23-8.5) years; 7 (early IA) had medication changes in 12/52. Early IA and RA results were combined as similar (Table 1).

Table 1: Mean (SD) outcomes pre- and post- 4 weeks of compression glove wear (Right hand only; n=38).

Outcome measures	0 weeks	4 weeks	p	Effect size
Hand pain on activity (0-10)	5.69 (2.13)	4.67 (2.32)	0.006*	0.18
Hand pain at night (0-10)	4.26 (3.26)	3.41 (2.30)	0.03*	0.12
Hand stiffness (0-10)	5.51 (2.61)	3.92 (2.25)	0.001*	0.33
2nd PIPJ circumference (cm)	6.66 (0.58)	6.57 (0.55)	0.03*	0.12
CFF Middle (cms)	5.45 (1.66)	4.88 (1.35)	0.002*	0.23
MAP-HAND	21.91 (7.83)	19.78 (7.36)	0.02*	0.12
GAT	39.44 (20.82)	32.73 (2.86)	0.005*	0.20

Conclusion:

Compression gloves led to significant improvements in: pain (day/night), stiffness, swelling, finger flexion and hand function, with moderate to large effect sizes, although PIPJ swelling changes were small. The lack of a control group means improvements may not be due to compression gloves. A randomised controlled trial is required, including longer follow-up.