functioning and social adjustment, two important components of health-related quality of life. Increased attention to effective management of pain in pediatric scleroderma will likely lead to improved functioning and quality of life.

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FRI0706-HPR COMPARISON OF IMPACT OF VERUM AND PLACEBO THUMB BASE ORTHOSES ON SKIN SURFACE TEMPERATURE AND PRESSURE : A PROOF OF CONCEPT STUDY

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Background: Basal thumb osteoarthritis (OA) can cause significant pain and cause a decline in hand function (Litwic et al 2013). Guidelines for treatment of symptomatic basal thumb OA supports a conservative approach, including splinting to support the carpometacarpal joint (CMCJ) and reduce the painful movements of the thumb joint during functional tasks (Zhang et al 2000). Lack of legitimate placebo thumb splint has been a barrier to research to distinguish the specific mechanism of the perceived therapeutic effect of wearing thumb splints. Despite this, splinting of the basal thumb joint remains a common intervention for pain. This research contributed to a national CRN portfolio adopted study examining the clinical effectiveness and efficacy of basal thumb splints for people with basal thumb OA.

Objectives: In the present study, the efficacy of two novel placebo splint designs are examined in comparison to widely used verum thumb splint and no splint for the effect at skin surface interface whilst performing a functional task

Methods: This proof of concept study used a single blind, cross-over design that assessed the effect of wearing different splint conditions on the skin surface interface during a functional hand task.

17 healthy participants (male n=8; female n=9) who met the inclusion criteria were recruited to take part in the study. Skin surface temperature (°C) and pressure exerted at the skin surface interface was recorded during performance of a standardised hand function task, the nine-hole peg test (9HPT) for four splint conditions i) verum splint (Promedics NC79562), ii) placebo lycra splint (P1); iii) placebo lycra splint "lite" (P2) and iv) no splint. Data were recorded and analysed by one rater using MatLab and SPSS software.

Results: It was observed from the mean rank that the verum splint condition caused the greatest pressures compared to all other splint conditions. Post hoc analysis revealed there was no difference in pressure exerted over the CMCJ between the no splint condition and P1 ($Z = -1.577$, $p=0.115$) and P2 ($Z = -0.365$, $p=0.715$). The verum splint caused a significant increase in pressure over the CMCJ in comparison to all other test conditions ($Z = -3.516$, $p<0.0005$).

ANOVA showed a significant effect of splint design on temp ($F(3,16) = 22.96$, $p<0.05$). Post hoc analysis revealed that the verum splint produced a significantly higher skin surface temperature ($32.67^{\circ}\text{C} \pm 1.10^{\circ}\text{C}$) than P1 ($31.75^{\circ}\text{C} \pm 1.10^{\circ}\text{C}$, $p<0.0005$), P2 ($31.85^{\circ}\text{C} \pm 1.11^{\circ}\text{C}$, $p=0.001$) and no splint ($31.06^{\circ}\text{C} \pm 1.24^{\circ}\text{C}$, $p<0.0005$) conditions. No differences in skin temperature was shown between placebo designs ($p=1.00$).

Conclusion: This study is the first to characterise the effect of different thumb splint designs on the skin surface temperature and the mechanical loading force local to the CMCJ.

This study further informs the specific effect of thumb splints at the joint interface. Identifying that new placebo splint designs do not provide additional support to the thumb joint is a novel supplement to research surrounding thumb splinting intervention and can support the use of these devices as placebo splint conditions in future trials.

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FRI0707-HPR IS A TAILORED DELIVERY OF NORDIC WALKING ACCEPTABLE FOR PEOPLE WITH INFLAMMATORY RHEUMATIC DISEASE?

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Background: People with inflammatory rheumatic diseases find it more difficult to stay physically active. Although interventions delivered in a clinical setting lead to short-term benefits, sustaining physical activity is challenging. Nordic Walking is a whole-body physical activity that involves walking with poles. It has been shown to be beneficial in long-term conditions but not specifically for inflammatory rheumatic diseases.

Objectives: To establish the acceptability of a tailored Nordic Walking intervention in this population as preparation for a full efficacy trial.

Methods: The intervention was developed collaboratively with patient research partners and involves a 30-minute training session followed by 10 one hour sessions of Nordic Walking over 10 weeks. Twelve people received the intervention between May and July 2018 and 12 more from September to November 2018. The intervention differed from standard Nordic Walking in several ways; initial training was provided in small groups of 2 to 3 by an instructor and a rheumatology physiotherapist. Flexible routes enabled participants to self-select their pace and distance. Routes radiated from, and circled back to, a central base with seats and drinking water.

Participants completed a Short Form (36) Health Survey (the RAND) at baseline and post-intervention and took part in a focus group or interview.

Results: Eighteen females and six males; mean age 60 years (range 35-82) were recruited from rheumatology clinics in the Southwest of England. All participants had a diagnosis of an inflammatory rheumatic disease including rheumatoid arthritis, psoriatic arthritis, axial spondyloarthritis, connective tissue disease and systemic vasculitis. SF-36 data suggested a trend towards improvements and qualitative data provided insights into why the intervention was acceptable. All 24 participants enjoyed being active outdoors and reported benefits such as 'walking taller', 'better posture', 'better balance' and 'improved well-being'.

Results reveal how important the adaptations with this tailored delivery of Nordic Walking were to participants. They found it reassuring that rheumatology specialists had contributed to the design of the intervention and that delivery was supported by a physiotherapist. Learning Nordic Walking in small groups alongside people with similar conditions was popular and meant that participants could walk at their own pace, engage with peers and felt supported. Participants said they would not join a non-specialised Nordic Walking group. Several participants subsequently purchased their own Nordic Walking poles and have arranged to meet independently to continue, indicating the potential for sustainability.

Conclusion: This tailored delivery of Nordic Walking has the potential to offer acceptable, beneficial and sustainable physical activity for patients with inflammatory rheumatic diseases. Further research is now needed to investigate the long-term impact in a full efficacy trial.

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