



15. \*Alexandra Sirois, Nathan Chiarlitti, Ines Colmegna, Ross E Andersen, Susan J. Bartlett.  
McGill University, Montreal, QC.

### Effects of Strength Training on Participation and Health Related Quality of Life in Rheumatoid Arthritis.

**Objectives:** The physical, emotional, and social burden associated with RA often limits participation in social roles and activities and results in poor health-related quality of life (HRQL). The goal of this pilot RCT was to compare the impact of two exercise programs (progressive resistance training + flexibility [PRT+FLEX] vs. flexibility [FLEX; range of motion]) on physical function, participation and HRQL in individuals with RA, and assess the feasibility of methods and measures to be prepared for a fully powered study.

**Methods:** Participants (N=18) were adults with RA who were sedentary, receiving care from a rheumatologist; all received clearance to exercise. Participants provided sociodemographic information and completed validated questionnaires assessing physical function, participation, HRQL, exercise confidence and enjoyment. The 400m walk was used to assess performance. Next, participants were randomized to 12 weeks of either: 1) progressive resistance training and flexibility exercises (PRT+FLEX); or 2) FLEX exercise only. PRT+FLEX included two supervised sessions using strength training equipment and one home-based session using elastic resistance bands each week. The FLEX group completed the same FLEX exercises at home. Change between groups over time was compared using repeated measures ANOVA.

**Results:** Participants were mostly female (94%) and white (78%) with a mean (SD) age of 38 (19) years and RA duration of 8 (5) years. Adherence to the training sessions was 88%. Significant group X time interactions reflecting greater improvements for PRT+FLEX vs. FLEX were evident in 400 m walk time ( $p = 0.05$ ), participation ( $p = 0.02$ ), fatigue ( $p = 0.03$ ), pain ( $p = 0.02$ ), patient global ( $p = 0.01$ ), physical activity enjoyment ( $p = 0.03$ ), anxiety (trend;  $p = .08$ ), and patient-reported disease activity ( $p = 0.02$ ). Both groups improved significantly in physical function (PROMIS PF 4a,  $p = 0.002$ ; MDHAQ,  $p = 0.005$ ), sleep ( $p = 0.006$ ) though the magnitude of improvement was much greater in the PRT+FLEX group, the interaction was not statistically significant. There was also a trend for less pain interference ( $p = 0.07$ ) in all over time. Depressive symptoms were low at baseline and 12 weeks in both groups.

**Conclusions:** As compared to those who completed FLEX, 12-weeks of PRT+FLEX was associated with significantly improved 400 m walk times, perceived well-being, fatigue, and pain. Attendance at supervised classes was high, exercise enjoyment increased, and disease activity decreased significantly more in the PRT+FLEX group. There were no injuries or adverse outcomes in either group. These preliminary results suggest that resistance training RA and may offer new opportunities to improve participation and HRQL in people with RA.