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**Acknowledgements:** NIL.

**Disclosure of Interests:** None Declared.

**DOI:** 10.1136/annrheumdis-2023-eular.1375

**OP0087-HPR HIGH INTENSITY EXERCISE IMPROVES GENERAL AND PHYSICAL FATIGUE IN PATIENTS WITH ESTABLISHED RHEUMATOID ARTHRITIS**

**Keywords:** Physical therapy/Physiotherapy, Randomized control trial, Rheumatoid arthritis

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**Background:** Despite more effective control of inflammation by improved pharmacological therapies, persistent pain and fatigue are still a major problem among patients with rheumatoid arthritis (RA), which often leads to slow deterioration of function and general health.

**Objectives:** To evaluate the effect of high-intensity exercise on fatigue, pain, and general health in patients with established RA.

**Methods:** Patients with RA (ACR/EULAR 1987/2010 criteria), disease duration > 12 months, were recruited and randomised to either an exercise group or a control group. The exercise program of 12 weeks comprised supervised cardiorespiratory high-intensity interval exercise and strength exercise twice per week plus an additional non-supervised session of the patient's own choice. The controls received individual information for physical activity according to the general health recommendations and were encouraged to be active on moderate intensive level  $\geq 150$  minutes/week. Outcomes. Self-reported ratings on symptoms were evaluated at baseline (BL) and 3 months (M3): Fatigue, using the Multidimensional Fatigue Inventory (MFI 20) scale, including five subscales; general fatigue, physical fatigue, mental fatigue, reduced activity and reduced motivation (range = 4 to 20 for each subscale, higher score = higher degree of fatigue); visual analogue scale (VAS) was used for the assessment of average pain intensity, fatigue and general health during the last week due to the rheumatic disease (0 = no symptom, 100 = worst possible).

**Results:** A total of 73 patients median age 49 (86.3% women), median disease activity 2.0 (1.34 to 2.56 IQR) (DAS28-ESR) were included in the study. At 3 months, there was a significant improvement on MFI-20 subscales general fatigue ( $p=0.002$ ) and physical fatigue ( $p<0.001$ ) in the intervention group when compared with the control group. No significant differences of change were found for the other subscales, general fatigue, reduced activity and reduced motivation or for VAS fatigue. A significant difference of change was found between the groups for VAS Global ( $p=0.026$ ) while no significant differences of change was found for VAS pain between the groups. Table 1.

**Conclusion:** A 12-week exercise program of high intensity had beneficial effects on general fatigue and physical fatigue, in patients with established RA whereas the intervention did not influence pain intensity or general health. A multidimensional scale on fatigue appears to better distinguish changes in fatigue than a one-dimensional scale in patients with established RA.

**Table 1. Differences between groups in assessment measures at 3 months compared to baseline**

	Intervention group (n=37)		Control group (n=36)		Between group Analysis of change $\Delta$ $p$ -value
	Baseline	$\Delta$ M3-BL (n=35)	Baseline	$\Delta$ M3-BL (n=29)	
MFI-20					
General fatigue	13,0 (11,0 to 17,5)	-3,0 (-5,0 to 1,0)**	14,0 (12,0 to 17,0)	1,0 (-2,0 to 3,0)	<b>0,002</b>
Physical fatigue	13,0 (9,0 to 17,05)	-4,0 (-8,0 to -1,0)***	13,0 (10,0 to 16,0)	0,0 (-2,75 to 1,75)	<b>&lt;0,001</b>

Mental fatigue	11,0 (7,0 to 12,5)	0,0 (-3,0 to 1,0)	11,0 (9,0 to 13,0)	0,0 (-3,0 to 1,0)	0,784
Reduced motivation	8,0 (5,0 to 10,0)	0,0 (-3,0 to 1,0)	9,0 (6,0 to 12,0)	1,0 (-1,0 to 2,0)	0,110
Reduced activity	11,0 (8,0 to 13,0)	-1,0 (-5,0 to 1,0)*	11,0 (8,00 to 13,0)	0,0 (-3,0 to 2,75)	0,159
VAS, 0-100 mm					
Fatigue	33,0 (15,9 to 49,2)	-2,0 (-12,0 to 11,8)	27,3 (6,0 to 46,3)	6,4 (-2,6 to 17,8)*	0,079
Pain	14,7 (7,6 to 17,9)	1,0 (-10,5 to 8,7)	12,6 (4,0 to 31,5)	1,4 (-13,4 to 8,1)	0,939
G-health	15,7 (7,0 to 26,8)	0,0 (-10,5 to 5,5)	14,0 (4,0 to 25,2)	2,5 (-0,2 to 29,4)*	<b>0,026</b>

Variables are presented as median and IQR. MFI Multidimensional Fatigue Inventory, VAS Visual Analog Scale Fatigue, Pain, Global. Delta values were compared using the Mann-Whitney  $U$  test. Within-group comparisons were made with Wilcoxon signed rank test. \*Significant difference,  $p<0.05$ . \*\*Significant difference,  $p<0.01$ . \*\*\*Significant difference,  $p<0.001$

**REFERENCES:** NIL.

**Acknowledgements:** NIL.

**Disclosure of Interests:** None Declared.

**DOI:** 10.1136/annrheumdis-2023-eular.3470

**OP0088-HPR FACTORS ASSOCIATED WITH MEETING RECOMMENDED PHYSICAL ACTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS WHO HAVE POOR PHYSICAL FUNCTION**

**Keywords:** Patient reported outcomes, Lifestyles, Rheumatoid arthritis

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**Background:** Rheumatoid arthritis (RA) is a chronic disease that often leads to a major impact on physical function and quality of life. It is well known that physical activity is an important part of treatment and improve clinical outcome.

**Objectives:** The aim was to study factors associated with meeting recommended level of physical activity in people with RA with poorer physical function.

**Methods:** In 2017, a survey was sent to patients included in the BARFOT (Better Anti-Rheumatic pharmacotherapy) cohort [1]. The questionnaire included questions on age, sex, disease duration, smoking, body mass index (BMI), physical function assessed by health assessment questionnaire (HAQ; 0-3, best to worst), numeric rating scale (NRS) pain (0-10, best to worst), NRS fatigue (0-10, best to worst), disease activity assessed by self-reported 28-tender (TJC, 0-28) and swollen joint count (SJC, 0-28), health-related quality of life assessed by EuroQol 5-dimension 3-level (EQ5D; 0-1, worst to best), empowerment assessed by the Swedish Rheumatic Disease Empowerment Scale (SWE-RES-23; 1-5, worst to best), cardiovascular diseases (CVD), and antirheumatic treatment, corticosteroids (CS), conventional disease-modifying antirheumatic drug (cDMARD), biologic DMARD (bDMARD). 1065 patients (69%) answered the questionnaire and were dichotomized based on the median of HAQ, which was 0.5. The group with the worst physical function, HAQ >0.5, was further dichotomized based on whether they met the World Health Organisation (WHO) recommended level of physical activity (pulse-increasing physical activity with moderate intensity at least 150 minutes/week or at least 75 minutes/week with high intensity) or not. Median and interquartile range (IQR) and Mann-Whitney  $U$  test or chi-2 were used to analyse differences between groups, when appropriate. A logistic regression model adjusting for age and sex was used to study factors associated with fulfilling the recommendations on physical activity.

**Results:** The patients with the worst physical function, meeting the criteria for recommended physical activity (RPA), had less pain, and fatigue, fewer swollen and tender joints, less CVD 48% vs. 64% ( $p<0.001$ ), and fewer were obese than those who did not meet the recommendations (Not RPA), Table 1. They also had a better quality of life and a higher degree of empowerment, Table 1. Factors associated with fulfilling the recommended level of physical activity in the group with the worst physical function were obesity, BMI  $\geq 30$  kg/m<sup>2</sup> (OR 0.51, 95% CI 0.32-0.83), HAQ (OR 0.32, 95% CI 0.21-0.48), NRS pain (OR 0.84, 95% CI 0.77-0.91), NRS fatigue (OR 0.88, 95% CI 0.82-0.95), TJC (OR 0.97, 95% CI 0.95-1.00) and SJC (OR 0.96, 95% CI 0.93-0.99), EQ5D (OR 8.36, 95% CI 3.74-18.64), SWE-RE-S23 (OR 1.40, 95% CI 1.02-1.93). and cardiovascular diseases