

**PHYSICAL ACTIVITY BUT NOT SEDENTARY ACTIVITY IS REDUCED IN PRIMARY
SJÖGREN'S SYNDROME**

Rheumatology International

Wan-Fai Ng¹, Ariana Miller², Simon J Bowman³, Elizabeth J Price⁴, George D Kitas⁵, Colin Pease⁶, Paul Emery⁶, Peter Lanyon⁷, John Hunter⁸, Monica Gupta⁸, Ian Giles⁹, David Isenberg⁹, John McLaren¹⁰, Marian Regan¹¹, Annie Cooper^{12,13}, Steven A Young-Min¹³, Neil McHugh¹⁴, Saravanan Vadivelu¹⁵, Robert J Moots¹⁶, David Coady¹⁷, Kirsten MacKay¹⁸, Bhaskar Dasgupta¹⁹, Nurhan Sutcliffe²⁰, Michele Bombardieri²⁰, Costantino Pitzalis²⁰, Bridget Griffiths²¹, Sheryl Mitchell²¹, Samira Tatiyama Miyamoto²², Michael Trenell² on behalf of the UK primary Sjögren's syndrome registry²³

¹Musculoskeletal Research Group, ²MoveLab, Physical Activity & Exercise Research, Institute of Cellular Medicine and NIHR Biomedical Research Centre for Ageing & Chronic Disease, Newcastle University, Newcastle upon Tyne, UK

³University Hospital Birmingham, Birmingham, UK

⁴Great Western Hospitals NHS Foundation Trust, Swindon, UK.

⁵Department of Rheumatology, Dudley Group of Hospitals NHS Trust, Dudley, UK.

⁶Institute of Rheumatic and Musculoskeletal Medicine, University of Leeds & NIHR Leeds Musculoskeletal Biomedical Research Unit, Leeds Teaching Hospitals Trust, Leeds, UK.

⁷Nottingham University Hospital, Nottingham, UK

⁸Gartnavel General Hospital, Glasgow, UK.

⁹University College London Hospitals NHS Foundation Trust, London, UK.

¹⁰NHS Fife, Whyteman's Brae Hospital, Kirkcaldy, UK

¹¹Royal Derby Hospital, Derby, UK.

¹²Royal Hampshire County Hospital, Winchester, UK.

¹³Portsmouth Hospitals NHS Trust, Portsmouth, UK.

¹⁴Royal National Hospital for Rheumatic Diseases, Bath, UK

¹⁵Queen Elizabeth Hospital, Gateshead, UK.

¹⁶Aintree University Hospitals, Liverpool, UK

¹⁷Royal Sunderland Hospital, Sunderland, UK

¹⁸Torbay Hospital, Torquay, UK

¹⁹Southend University Hospital, Westcliff-on-Sea, UK.

²⁰Barts and the London School of Medicine and Dentistry, UK

²¹Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, UK.

²² Universidade Federal do Espírito Santo, Vitoria, Universidade Federal de São Paulo, São Paulo, BR.
CAPES Foundation scholar – Proc. n. BEX 8831/14-9

²³Denotes corporate authorship. See appendix 1 for the full list of members.

Corresponding author: Wan-Fai Ng.

e-mail: Wan-fai.Ng@ncl.ac.uk

Supplementary table S1. Comparison of the primary Sjögren’s syndrome cohort (matched IPAQ-SF) and remaining UKPSSR cohort

	Matched IPAQ-SF group (PSS cohort)	Remaining UKPSSR cohort	p
Sample size	273	415	
Age (years)	57 (47-65)	62 (52-70)	<0.001
Gender (Number of females, (%))	254 (93%)	389 (93.7%)	0.116*
Body mass index (Kg/m ²)	25 (23-28)	26 (30-22)	0.001
Disease duration (years)	5 (2-10)	5 (2-10)	0.596
CPS	7 (5-11)	10 (6-13)	<0.001
Anti-Ro/La + (number, (%))	242 (88.6%)	357 (86%)	0.354
ESSDAI (0-123)	3 (1-7)	4 (1-7)	0.347
ESSPRI (0-10)	5.3 (3.3-6.7)	5.7 (4.0-7.3)	0.011
EULAR-Sicca Score (0-10)	5.7 (3.7-7.7)	6.3 (4.3-8.0)	0.062
Overall fatigue (VAS, 0-100)	55 (29-72)	64 (41-79)	0.002
Physical fatigue (ProF, 0-7)	3.5 (2.3-4.8)	4.3 (2.8-5.5)	0.002
Mental fatigue (ProF, 0-7)	2.5 (1-4)	3 (1.5-4.5)	0.023
Pain (0-10)	4 (1.0-6.8)	5 (2-8)	<0.001
Anxiety (HADS, 0-21)	7 (4-10)	8 (5-11)	0.035
Depression (HADS, 0-21)	4 (2-7)	6 (3-10)	<0.001
Daytime sleepiness (ESS, 0-24)	7 (4-11)	9 (4-11)	0.001
Dysautonomia - COMPASS (0-170)	39 (27-50)	41 (29-54)	0.009
OGS (5-25)	3 (0-5)	3 (1-6)	0.004
EQ-5D - TTO (-1 to 1)	0.73 (0.66-0.80)	0.69 (0.52-0.80)	<0.001
VAS (0 – 100)	70 (50-80)	60 (40-75)	<0.001

All values are presented as medians (interquartile ranges) with the exception of sample size gender and anti-Ro/La positivity. *Fisher exact test.

IPAQ-SF: International Physical Activity Questionnaire – short form; UKPSSR: United Kingdom primary Sjögren’s syndrome registry; CPS: Comorbidity-Polypharmacy score; kg/m²: kilogram-meter squared; ESSDAI: EULAR Sjögren Syndrome Disease Activity Index; ESSPRI: EULAR Sjögren Syndrome Patient Reported Index; VAS: visual analogue scale; ProF: Profile of Fatigue ; HADS: Hospital Anxiety and Depression Scale; ESS: Epworth Sleepiness Scale; COMPASS: Composite Autonomic Symptom Scale; OGS: Orthostatic Grading Scale; EQ-5D: EuroQol 5-domain; TTO: time trade-off