Supplementary Material

Table S1. BASDAI components stratified by gender

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Table S1. BASDAI components stratified by gender

Total axSpA n=2719	**Male n= 1858 (68.3)**	**Female n= 861 (31.7)**	**p-value**
BASDAI Q1 (0-10)	**4.2 (2.8)**	**5.1 (2.7)**	**<0.001**
BASDAI Q2 (0-10)	**4.3 (2.9)**	**4.9 3.0)**	**<0.001**
BASDAI Q3 (0-10)	**2.6 (2.8)**	**3.3 (3.0)**	**<0.001**
BASDAI Q4 (0-10)	**3.0 (2.9)**	**3.9 (3.2)**	**<0.001**
BASDAI Q5 (0-10)	**3.6 (3.0)**	**4.1 (3.1)**	**<0.001**
BASDAI Q6 (0-10)	**2.7 (2.7)**	**3.0 (2.8)**	**0.03**
Total pSpA n= 433	**Male n= 203 (46.8)**	**Female n= 230 (53.2)**	**p-value**
BASDAI Q1 (0-10)	**3.8 (2.7)**	**5.3 (2.7)**	**<0.001**
BASDAI Q2 (0-10)	**3.2 (3.0)**	**4.6 (3.3)**	**<0.001**
BASDAI Q3 (0-10)	**3.6 (3.1)**	**4.4 (3.0)**	**0.002**
BASDAI Q4 (0-10)	**3.3 (3.0)**	**5.2 (3.1)**	**<0.001**
BASDAI Q5 (0-10)	**3.1 (2.8)**	**4.2 (3.3)**	**<0.001**
BASDAI Q6 (0-10)	2.5 (2.6)	2.6 (2.6)	0.72
Total PsA n= 1033	**Male n= 501 (48.5)**	**Female n= 532 (51.5)**	**p-value**
BASDAI Q1 (0-10)	**4.1 (2.7)**	**5.7 (2.7)**	**<0.001**
BASDAI Q2 (0-10)	**3.4 (3.1)**	**4.9 (3.3)**	**<0.001**
BASDAI Q3 (0-10)	**3.7 (3.0)**	**5.1 (3.0)**	**<0.001**
BASDAI Q4 (0-10)	**3.5 (3.0)**	**5.2 (3.1)**	**<0.001**
BASDAI Q5 (0-10)	**3.4 (3.0)**	**4.8 (3.1)**	**<0.001**
BASDAI Q6 (0-10)	**2.4 (2.7)**	**3.4 (2.9)**	**<0.001**

Table S2 . Effect of gender on disease activity assessed by BASDAI

Assessment	**axSpA β (95% CI)**	**pSpA β (95% CI)**	**PsA β (95% CI)**
	n=2705	n=429	n=1019
Age (years)	0.006 (-0.001, 0.014)	-0.008 (-0.026, 0.010)	-0.01 (-0.02, 0.001)
Gender (female vs male)	**0.39 (0.20, 0.58)**	**1.22 (0.77, 1.68)**	**0.87 (0.59, 1.16)**
Education			
University	Ref	Ref	Ref
Secondary studies	**0.49 (0.31, 0.67)**	**0.48 (0.03, 0.94)**	**0.68 (0.36, 0.99)**
Primary studies	**0.65 (0.38, 0.91)**	0.11 (-0.58, 0.79)	**0.70 (0.30, 1.11)**
Marital status			
Married	Ref	Ref	Ref
Single	0.05 (-0.16, 0.25)	0.39 (-0.14, 0.91)	0.082 (-0.31, 0.47)
Divorced or widow	**0.42 (0.07, 0.77)**	0.42 (-0.50, 1.33)	0.37 (-0.05, 0.79)
BMI (Kg/m2)	**0.05 (0.03, 0.07)**	**0.07 (0.02, 0.11)**	0.02 (-0.007, 0.04)
Smoking (current or past vs never smoker)	**0.25 (0.07, 0.43)**	-0.05 (-0.54, 0.44)	0.09 (-0.19, 0.37)
Axial involvement (yes vs no)	**0.58 (0.05, 1.12)**	0.34 (-0.11, 0.79)	**0.65 (0.36, 0.95)**
Peripheral arthritis (yes vs no)	**0.62 (0.43, 0.81)**	-0.12 (-1.04, 0.81)	0.13 (-0.36, 0.62)
Enthesitis (yes vs no)	**0.22 (0.05, 0.40)**	0.40 (-0.03, 0.84)	**0.51 (0.23, 0.79)**
Psoriasis (yes vs no)	-0.07 (-0.4, 0.26)	0.05 (-0.58, 0.68)	0.12 (-0.39, 0.63)
Fibromyalgia (yes vs no)	**1.62 (1.29, 1.94)**	0.30 (-0.45, 1.05)	**1.66 (1.21, 2.11)**
NSAIDs current intake	**0.75 (0.55, 0.95)**	**1.02 (0.52, 1.53)**	**0.50 (0.21, 0.80)**
Steroids intake	0.27 (-0.05, 0.59)	**0.96 (0.44, 1.48)**	**0.69 (0.34, 1.04)**
bDMARDs since diagnosis	**-0.21 (-0.39, -0.02)**	-0.25 (-0.70, 0.20)	-0.11 (-0.41, 0.18)

Results from multilevel multivariable linear and logistic regression analyses.
*Estimates with p<0.05 are highlighted in bold.
‡ Not included in the model.
BASDAI, Bath Ankylosing Spondylitis Disease Activity Index; BMI, Body Mass Index; NSAIDs, Non-steroidal Anti-Inflammatory Drugs; bDMARDs, biologic synthetic Disease Modifying Antirheumatic Drugs.

Table S3 . Effect of gender on disease activity assessed by ASDAS

Assessment	axSpA β (95% CI)	pSpA β (95% CI)	PsA β (95% CI)
	n=2671	n=426	n=1009
Age (years)	0.001 (-0.003, 0.004)	-0.004 (-0.013, 0.004)	-0.002 (-0.007, 0.004)
Gender (female vs male)	0.02 (-0.07, 0.10)	**0.36 (0.15, 0.58)**	**0.25 (0.12, 0.38)**
Education			
University	Ref	Ref	Ref
Secondary studies	**0.26 (0.17, 0.35)**	0.23 (0.02, 0.44)	**0.30 (0.16, 0.45)**
Primary studies	**0.38 (0.27, 0.51)**	0.13 (-0.20, 0.45)	**0.38 (0.19, 0.56)**
Marital status			
Married	Ref	Ref	Ref
Single	0.10 (-0.002, 0.19)	0.08 (-0.17, 0.32)	0.10 (-0.08, 0.28)
Divorced or widow	**0.27 (0.10, 0.43)**	0.20 (-0.22, 0.62)	0.11 (-0.08, 0.30)
BMI (Kg/m2)	**0.03 (0.02, 0.04)**	**0.03 (0.01, 0.05)**	**0.02 (0.01, 0.03)**
Smoking (current or past vs never smoker)	**0.15 (0.07, 0.24)**	0.04 (-0.19, 0.27)	0.03 (-0.10, 0.15)
Axial involvement (yes vs no)	**0.37 (0.11, 0.63)**	0.19 (-0.02, 0.41)	**0.24 (0.10, 0.37)**
Peripheral arthritis (yes vs no)	**0.22 (0.13, 0.32)**	0.06 (-0.36, 0.49)	-0.02 (-0.25, 0.21)
Enthesitis (yes vs no)	**0.08 (-0.01, 0.16)**	0.20 (-0.01, 0.40)	**0.17 (0.04, 0.30)**
Fibromyalgia (yes vs no)	**0.50 (0.34, 0.65)**	-0.01 (-0.36, 0.34)	**0.57 (0.36, 0.77)**
NSAIDs current intake	**0.41 (0.32, 0.50)**	**0.52 (0.28, 0.76)**	**0.35 (0.19, 0.51)**
Steroids intake	**0.31 (0.16, 0.46)**	**0.67 (0.42, 0.91)**	**0.40 (0.30, 0.50)**
csDMARDs since diagnosis	**0.11 (0.02, 0.20)**	0.21 (-0.10, 0.52)	-0.017 (-0.27, 0.24)
bDMARDs since diagnosis	**-0.12 (-0.20, -0.03)**	-0.17 (-0.38, 0.04)	-0.04 (-0.18, 0.10)

Results from multilevel multivariable linear and logistic regression analyses.
*Estimates with p<0.05 are highlighted in bold.
ASDAS, Ankylosing Spondylitis Disease Activity Score; BMI, Body Mass Index; NSAIDs, Non-steroidal Anti-Inflammatory Drugs; csDMARDs, conventional synthetic Disease Modifying Antirheumatic Drugs; bDMARDs, biologic synthetic Disease Modifying Antirheumatic Drugs.

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Table S4 . Effect of gender on functional ability (BASFI)

Assessment	**axSpA β (95% CI)**	**pSpA β (95% CI)**	**PsA β (95% CI)**
	n=2604	n=395	n=840
Age (years)	**0.036 (0.030, 0.043)**	**0.02 (0.003, 0.04)**	**0.02 (0.012, 0.033)**
Gender (female vs male)	0.01 (-0.14, 0.17)	0.30 (-0.12, 0.71)	**0.46 (0.20, 0.72)**
Education			
University	Ref	Ref	Ref
Secondary studies	**0.25 (0.10, 0.40)**	-0.12 (-0.54, 0.29)	0.11 (-0.19, 0.40)
Primary studies	**0.37 (0.15, 0.59)**	-0.04 (-0.67, 0.59)	0.27 (-0.10, 0.64)
Marital status			
Married	Ref	Ref	Ref
Single	**0.27 (0.09, 0.44)**	0.13 (-0.36, 0.62)	0.140 (-0.22, 0.5)
Divorced or widow	0.16 (-0.13, 0.45)	-0.08 (-0.88, 0.72)	0.23 (-0.14, 0.61)
BMI (Kg/m2)	**0.02 (0.003, 0.03)**	0.03 (-0.007, 0.08)	0.007 (-0.015, 0.03)
ASDAS	**1.46 (1.39, 1.53)**	**1.40 (1.22, 1.58)**	**1.49 (1.37, 1.62)**
mNY criteria (yes vs no)	**0.33 (0.16, 0.51)**	0.15 (-0.30, 0.59)	0.22 (-0.13, 0.57)
Axial involvement (yes vs no)	0.021 (-0.45, 0.49)	0.12 (-0.34, 0.58)	**0.38 (0.07, 0.70)**
Fibromyalgia (yes vs no)	**0.81 (0.54, 1.08)**	0.20 (-0.50, 0.89)	**0.87 (0.47, 1.27)**
NSAIDs current intake	**0.17 (0.008, 0.34)**	0.03 (-0.45, 0.51)	0.13 (-0.14, 0.40)
bDMARDs since diagnosis	**0.20 (0.04, 0.35)**	0.14 (-0.28, 0.56)	**0.35 (0.08, 0.62)**

Results from multilevel multivariable linear and logistic regression analyses.
*Estimates with p<0.05 are highlighted in bold.
BMI, Body Mass Index; BASFI, Bath Ankylosing Spondylitis Functional Index; ASDAS, Ankylosing Spondylitis Disease Activity Score; mNY criteria, radiographic axial spondyloarthritis by modified Ney York criteria; NSAIDs, Non-steroidal Anti-Inflammatory Drugs; bDMARDs, biologic synthetic Disease Modifying Antirheumatic Drugs.

Table S5. Effect of gender on CRP, overall health (ASAS HI) and quality of life (EQ-5D)

Independent variables	CRP β (95% CI)	ASAS-HI β (95% CI)	EQ-5D β (95% CI)
	n=3861	n=4116	n=2785
Gender (female vs male)	-1.36 (-3.17, 0.44), 0.139	0.90 (0.70, 1.10), <0.001	-0.016 (-0.029, -0.003), 0.013
Age (years)	-0.07 (-0.15, 0.005), 0.066	-0.01 (-0.02, -0.004), 0.002	0.0006 (0.0001, 0.001), 0.020
Education			
University studies		Ref	Ref
Secondary studies	2.03 (0.16, 3.91), 0.034	0.41 (0.20, 0.62), <0.001	-0.008 (-0.021, 0.004), 0.208
Primary studies	2.72 (0.06, 5.37), 0.045	0.62 (0.32, 0.92), <0.001	-0.021 (-0.040, -0.001), 0.037
Marital status			
Single	Ref	Ref	Ref
Married	2.48 (0.32, 4.64), 0.024	-	-
Divorced or widow	3.47 (0.22, 6.71), 0.036	-	-
Body mass index (Kg/m2)	0.21 (0.04, 0.38), 0.015	-	0.002 (0.0004, 0.002), 0.007
Smoking (current or past vs never smoker)	-	0.28 (0.08, 0.47), 0.006	-0.017 (-0.029, -0.005), 0.007
ASDAS	‡	0.83 (0.72, 0.95), 0.006	-0.059 (-0.066, -0.052), <0.001
BASFI	‡	0.91 (0.86, 0.96), <0.001	-0.044 (-0.047, -0.040), <0.001
mNY criteria (yes vs no)	3.54 (1,68, 5.40), <0.001		0.019 (0.006, 0.032), 0.003
HLA-B27 positive (yes vs no)	-		0.018 (0.004, 0.032), 0.011
Peripheral arthritis (yes vs no)	-	0.37 (0.16, 0.58), <0.001	-
Enthesitis (yes vs no)	-	0.59 (0.39, 0.78), <0.001	-0.014 (-0.026, -0.002), 0.020
Dactylitis (yes vs no)	-	-	-
Uveitis (yes vs no)		-	-
Fibromyalgia (yes vs no)	-	1.27 (0.92, 1.62), 0.001	-0.036 (-0.058, -0.013), 0.002
NSAIDs current intake	2.97 (1.07, 4.87), 0.002	-	-
Steroids intake	8.44 (5.71, 11.17), <0.001	-	-
csDMARDs since diagnosis	3.46 (1.58, 5.33), <0.001	-	-

Results from multilevel multivariable linear regression analyses.
*Estimates with p<0.05 are highlighted in bold.
BMI, Body Mass Index; ASDAS, Ankylosing Spondylitis Disease Activity Score; BASFI, Bath Ankylosing Spondylitis Functional Index; mNY criteria, radiographic axial spondyloarthritis by modified Ney York criteria; NSAIDs, Non-steroidal Anti-Inflammatory Drugs; bDMARDs, biologic synthetic Disease Modifying Antirheumatic Drugs.