

## Supplementary tables and figures

**Supplementary table 1: Baseline characteristics of both selections of radiographic axial spondyloarthritis patients**

	<b>N=48 (selection hypothesis 1)</b>	<b>N=41 (selection hypothesis 2)</b>
Age at inclusion (mean (SD))	48.3 (9.8)	47.7 (9.3)
Sex (males)	41 (85%)	34 (83%)
HLA-B27 status	41 (85%)	35 (85%)
Uveitis	15 (31%)	11 (27%)
Psoriasis	3 (6%)	3 (7%)
IBD	3 (6%)	2 (5%)
Heel enthesitis	7 (15%)	6 (15%)
Dactylitis	3 (6%)	3 (7%)
Peripheral arthritis	8 (17%)	8 (19%)
Elevated CRP or ESR	25 (52%)	20 (49%)
BASDAI (mean (SD))	3.7 (2.3)	3.6 (2.3)
ASDAS-CRP (mean (SD))	2.6 (1.3)	2.5 (1.6)
Physician global (mean (SD))	4.2 (2.1)	3.9 (2.0)
NSAID use current	34 (71%)	26 (63%)
csDMARD use ever	12 (25%)	9 (22%)
csDMARD use current	5 (10%)	3 (7%)
bDMARD use ever	13 (27%)	11 (27%)
bDMARD use current	10 (21%)	9 (22%)

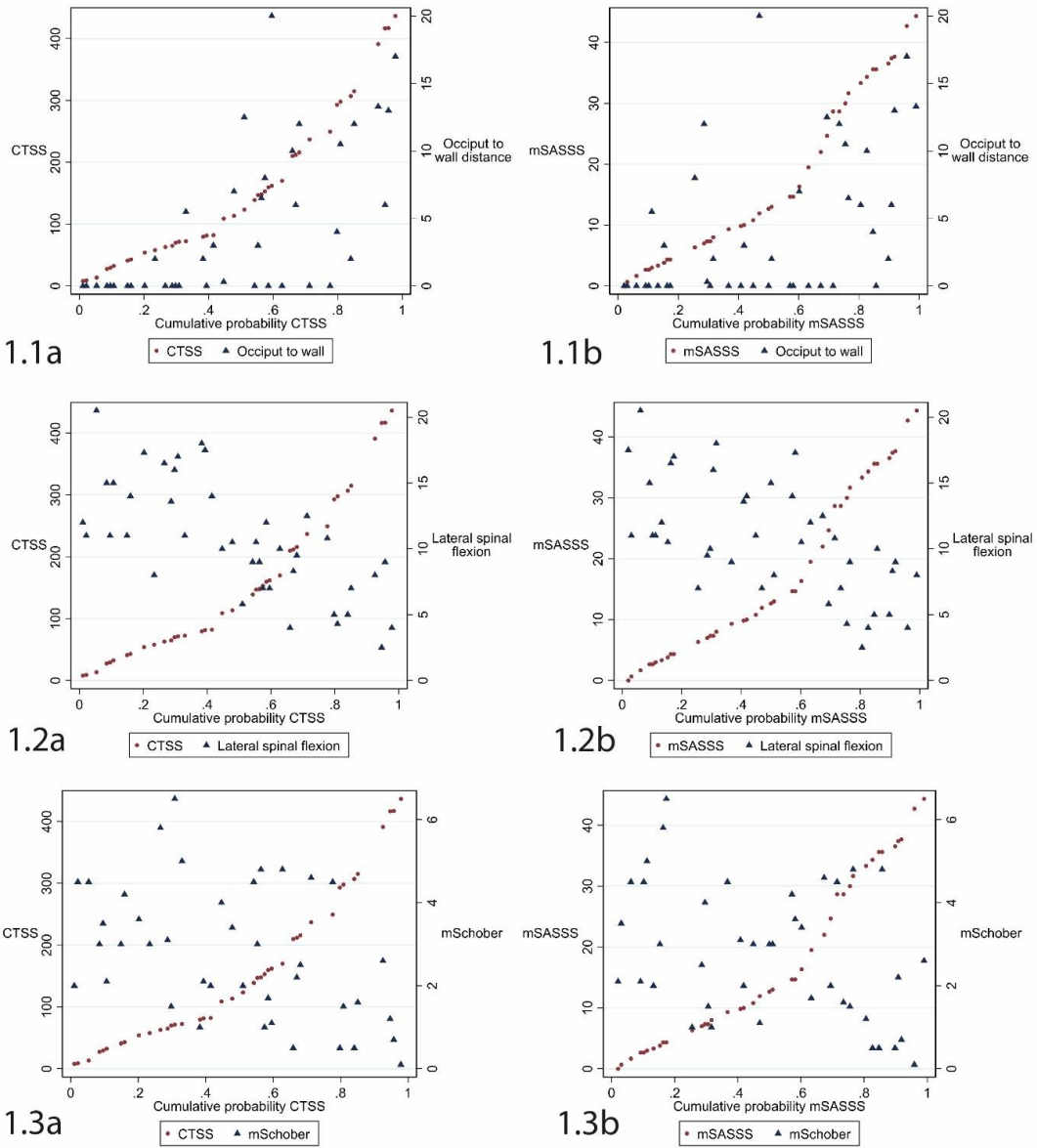
SpA features (uveitis, psoriasis, inflammatory bowel disease (IBD), heel enthesitis, dactylitis, peripheral arthritis, HLA-B27 and elevated CRP or ESR) are presented as ever/never. Numbers are presented as N (%) unless otherwise specified. SD, standard deviation; IBD, inflammatory bowel disease; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; BASDAI, Bath Ankylosing Spondylitis Disease Activity Index; ASDAS-CRP, Ankylosing Spondylitis Disease Activity Score; NSAID, non-steroidal anti-inflammatory drug; csDMARD, conventional synthetic Disease Modifying Anti Rheumatic Drug; bDMARD, biological Disease Modifying Anti Rheumatic Drug.

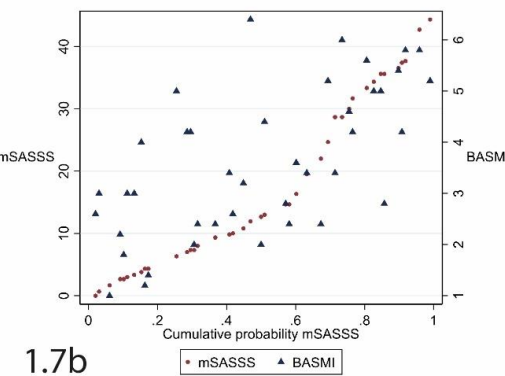
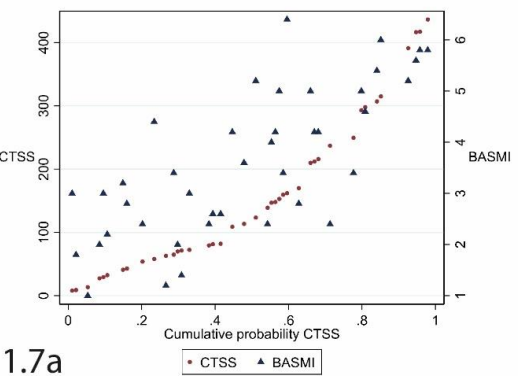
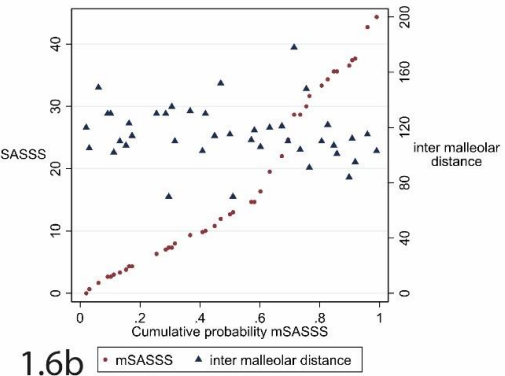
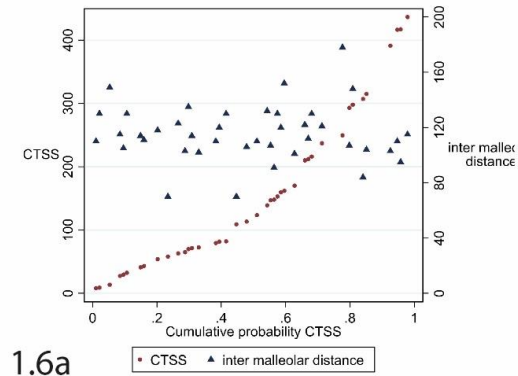
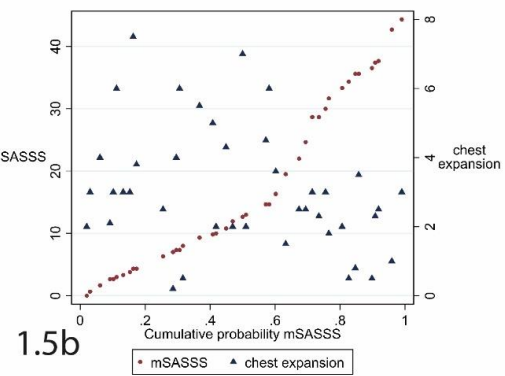
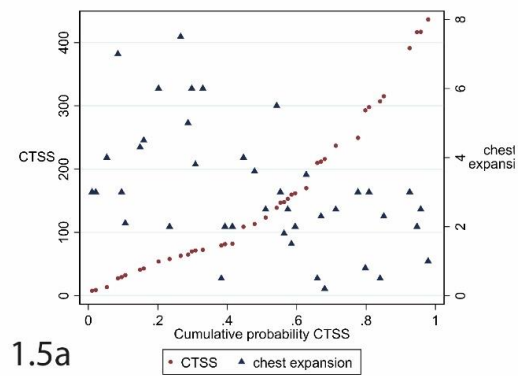
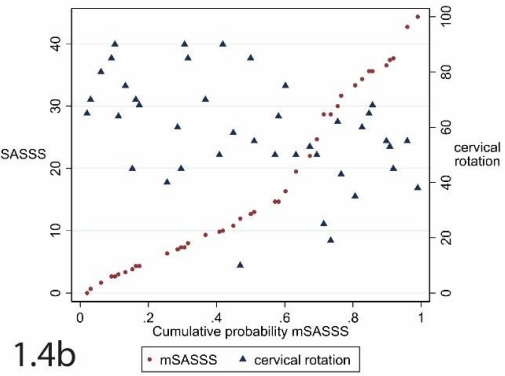
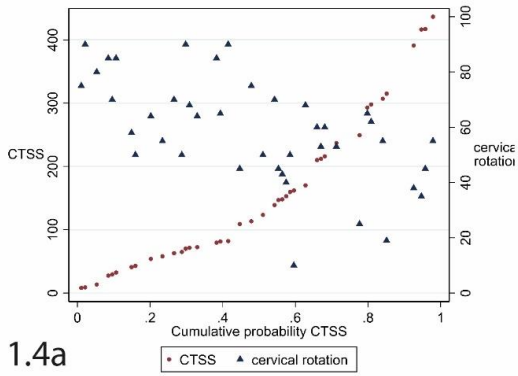
**Supplementary table 2:** Descriptive statistics of imaging and spinal mobility measures

	Mean	SD	Min.	25% percentile	Median	75% percentile	Max.
CTSS* (units, 0-552)	154	122	8	63	123	216	436
mSASSS* (units, 0-72)	17	14	0	6	13	30	44
Occiput to wall distance (cm)	4.3	5.6	0	0	2	7	20
Lateral spinal flexion (cm)	10.8	4.4	2.5	8	10.5	14	20.5
Modified Schober (cm)	2.8	1.6	0.1	1.5	2.6	4.2	6.5
Cervical rotation (degrees)	59	19	10	50	60	70	90
Chest expansion (cm)	3.0	1.8	0.2	2	3	4	7.5
Inter malleolar distance (cm)	115	20	70	105	114	130	178
BASMI (units, 0-10)	3.6	1.4	1	2.4	3.4	5	6.4

The table shows descriptive statistics on all measures on mobility and imaging. Higher values indicate more damage or reduced spinal mobility for the CTSS, mSASSS, occiput to wall distance, tragus to wall distance and BASMI. For the other measures, lower values indicate reduced mobility. CTSS, Computed Tomography Syndesmophyte Score; mSASSS, modified Stoke Ankylosing Spondylitis Spinal Score; BASMI, Bath Ankylosing Spondylitis Metrology Index. \* consensus scores

Supplementary figure 1





Cumulative probability plots show the visual representation of the patient level data on imaging (a: CTSS and b: mSASSS) and spinal mobility (1.1 occiput to wall distance; 1.2 lateral spinal flexion; 1.3 modified Schober; 1.4 cervical rotation; 1.5 chest expansion; 1.6 inter malleolar distance; 1.7 BASMI). Per plot, the data is organized on the imaging data, represented by red dots. The values increase along the X-axis and correspond to the left Y-axis, which shows either the CTSS or mSASSS scores. Each red dot is an individual patient value of the CTSS or mSASSS, and corresponds on the same point on the X-axis (placed directly above or below the red dot) to a blue triangle which is a value of a spinal mobility measure of the same patient. The blue triangles correspond to the right Y-axis, which shows the spinal mobility measure scores. Together, the red dots and blue triangles show how the scores of the imaging measure and spinal mobility measure correlate. If the blue triangles follow the trend of the red dots, a positive correlation is expected. If the blue triangles mark a trend in the opposite direction of the red dots, a negative correlation is expected. If the blue triangles are scattered with no apparent pattern or in a horizontal pattern, an absent or very low correlation is expected. The BASMI is a component measure, comprising the tragus to wall distance, lateral spinal flexion, modified Schober, cervical rotation and inter malleolar distance. CTSS, Computed Tomography Syndesmophyte Score; mSASSS, modified Stoke Ankylosing Spondylitis Spinal Score; BASMI, Bath Ankylosing Spondylitis Metrology Index.