

Supplementary Table S1. Comparison of audiovestibular findings between ERA patients and controls.

		ERA	Controls	<i>p</i>
n		30	30	-
Physical examination	Abnormal laryngoscopic examination, n (%)	0 (0)	0 (0)	-
	Abnormal otoscopic examination, n (%)	4 (13.3)	0 (0)	0.112
	Spontaneous nystagmus, n (%)	0 (0)	0 (0)	-
	Positive Romberg test, n (%)	0 (0)	0 (0)	-
Acoustic reflexes	Left ear, contralateral, 500 Hz threshold, dB, mean $\pm$ SD	93.4 $\pm$ 7.2	94.0 $\pm$ 6.6	0.753
	Left ear, contralateral, 1000 Hz threshold, dB, mean $\pm$ SD	92.0 $\pm$ 4.4	93.4 $\pm$ 5.1	0.278
	Left ear, contralateral, 2000 Hz threshold, dB, mean $\pm$ SD	92.5 $\pm$ 5.2	93.0 $\pm$ 5.0	0.723
	Left ear, contralateral, 4000 Hz threshold, dB, mean $\pm$ SD	96.8 $\pm$ 8.1	96.6 $\pm$ 9.2	0.938
	Left ear, ipsilateral, 500 Hz threshold, dB, mean $\pm$ SD	91.1 $\pm$ 4.6	91.2 $\pm$ 3.9	0.913
	Left ear, ipsilateral, 1000 Hz threshold, dB, mean $\pm$ SD	90.5 $\pm$ 4.2	90.8 $\pm$ 3.1	0.797
	Left ear, ipsilateral, 2000 Hz threshold, dB, mean $\pm$ SD	90.9 $\pm$ 5.6	91.4 $\pm$ 4.7	0.724
	Left ear, ipsilateral, 4000 Hz threshold, dB, mean $\pm$ SD	94.8 $\pm$ 8.7	92.4 $\pm$ 7.4	0.255
	Right ear, contralateral, 500 Hz threshold, dB, mean $\pm$ SD	94.3 $\pm$ 7.4	93.2 $\pm$ 6.1	0.566
	Right ear, contralateral, 1000 Hz threshold, dB, mean $\pm$ SD	91.8 $\pm$ 4.8	92.4 $\pm$ 5.4	0.662
	Right ear, contralateral, 2000 Hz threshold, dB, mean $\pm$ SD	92.3 $\pm$ 1.1	92.2 $\pm$ 5.6	0.938
	Right ear, contralateral, 4000 Hz threshold, dB, mean $\pm$ SD	95.7 $\pm$ 8.8	94.4 $\pm$ 8.2	0.577
	Right ear, ipsilateral, 500 Hz threshold, dB, mean $\pm$ SD	90.7 $\pm$ 6.3	90.2 $\pm$ 3.4	0.719
	Right ear, ipsilateral, 1000 Hz threshold, dB, mean $\pm$ SD	91.3 $\pm$ 4.8	90.6 $\pm$ 3.6	0.586
	Right ear, ipsilateral, 2000 Hz threshold, dB, mean $\pm$ SD	92.1 $\pm$ 6.3	90.0 $\pm$ 2.9	0.113
	Right ear, ipsilateral, 4000 Hz threshold, dB, mean $\pm$ SD	91.6 $\pm$ 18.0	92.8 $\pm$ 6.6	0.749
Pure tone audiometry	Left ear, air threshold, 125 Hz, dB, mean $\pm$ SD	13.3 $\pm$ 5.1	13.2 $\pm$ 4.1	0.915
	Left ear, air threshold, 250 Hz, dB, mean $\pm$ SD	12.3 $\pm$ 4.7	13.4 $\pm$ 5.5	0.450
	Left ear, air threshold, 500 Hz, dB, mean $\pm$ SD	12.5 $\pm$ 5.0	12.6 $\pm$ 4.6	0.939
	Left ear, air threshold, 1000 Hz, dB, mean $\pm$ SD	13.2 $\pm$ 8.0	13.0 $\pm$ 6.8	0.934
	Left ear, air threshold, 2000 Hz, dB, mean $\pm$ SD	15.0 $\pm$ 13.3	14.2 $\pm$ 8.0	0.785
	Left ear, air threshold, 4000 Hz, dB, mean $\pm$ SD	20.3 $\pm$ 14.1	18.0 $\pm$ 11.5	0.512
	Left ear, air threshold, 8000 Hz, dB, mean $\pm$ SD	22.5 $\pm$ 17.2	24.8 $\pm$ 17.5	0.627
	Left ear, bone threshold, 250 Hz, dB, mean $\pm$ SD	10.7 $\pm$ 2.9	11.0 $\pm$ 4.1	0.733
	Left ear, bone threshold, 500 Hz, dB, mean $\pm$ SD	10.7 $\pm$ 2.9	10.8 $\pm$ 4.0	0.882
	Left ear, bone threshold, 1000 Hz, dB, mean $\pm$ SD	11.7 $\pm$ 6.9	11.2 $\pm$ 5.1	0.773
	Left ear, bone threshold, 2000 Hz, dB, mean $\pm$ SD	13.5 $\pm$ 12.1	12.0 $\pm$ 6.6	0.563
	Left ear, bone threshold, 4000 Hz, dB, mean $\pm$ SD	17.0 $\pm$ 13.0	14.3 $\pm$ 9.3	0.393
	Right ear, air threshold, 125 Hz, dB, mean $\pm$ SD	13.0 $\pm$ 3.6	14.2 $\pm$ 7.9	0.172
	Right ear, air threshold, 250 Hz, dB, mean $\pm$ SD	11.7 $\pm$ 3.0	13.8 $\pm$ 7.7	0.217
	Right ear, air threshold, 500 Hz, dB, mean $\pm$ SD	12.3 $\pm$ 4.5	14.6 $\pm$ 7.5	0.192
	Right ear, air threshold, 1000 Hz, dB, mean $\pm$ SD	13.7 $\pm$ 9.6	15.2 $\pm$ 9.1	0.547
	Right ear, air threshold, 2000 Hz, dB, mean $\pm$ SD	16.3 $\pm$ 14.2	15.4 $\pm$ 8.9	0.769
	Right ear, air threshold, 4000 Hz, dB, mean $\pm$ SD	19.7 $\pm$ 14.7	18.2 $\pm$ 10.9	0.673
	Right ear, air threshold, 8000 Hz, dB, mean $\pm$ SD	23.8 $\pm$ 16.9	24.4 $\pm$ 15.6	0.898
	Right ear, bone threshold, 250 Hz, dB, mean $\pm$ SD	10.3 $\pm$ 1.3	11.6 $\pm$ 9.4	0.223
	Right ear, bone threshold, 500 Hz, dB, mean $\pm$ SD	10.8 $\pm$ 3.0	11.8 $\pm$ 5.2	0.413
	Right ear, bone threshold, 1000 Hz, dB, mean $\pm$ SD	12.0 $\pm$ 8.4	12.0 $\pm$ 5.6	0.999
	Right ear, bone threshold, 2000 Hz, dB, mean $\pm$ SD	14.5 $\pm$ 13.2	12.8 $\pm$ 7.2	0.549
	Right ear, bone threshold, 4000 Hz, dB, mean $\pm$ SD	16.8 $\pm$ 13.6	15.0 $\pm$ 8.8	0.548
Computerised dynamic posturography	C1, %, mean $\pm$ SD	94.6 $\pm$ 1.6	94.2 $\pm$ 2.1	0.496
	C2, %, mean $\pm$ SD	93.2 $\pm$ 2.5	93.8 $\pm$ 2.3	0.277
	C3, %, mean $\pm$ SD	93.2 $\pm$ 3.2	93.4 $\pm$ 2.5	0.825
	C4, %, mean $\pm$ SD	80.6 $\pm$ 7.9	86.3 $\pm$ 6.5	0.004
	C5, %, mean $\pm$ SD	66.9 $\pm$ 9.7	75.7 $\pm$ 8.0	<0.001
	C6, %, mean $\pm$ SD	62.9 $\pm$ 11.8	71.3 $\pm$ 10.5	0.005
	CES, %, mean $\pm$ SD	78.4 $\pm$ 6.0	83.4 $\pm$ 5.0	0.002
	SOM, %, mean $\pm$ SD	98.5 $\pm$ 1.8	99.6 $\pm$ 2.1	0.035
	VIS, %, mean $\pm$ SD	85.2 $\pm$ 7.6	91.5 $\pm$ 6.0	0.001
	VEST, %, mean $\pm$ SD	70.8 $\pm$ 10.0	80.3 $\pm$ 7.8	<0.001
	PREF, %, mean $\pm$ SD	97.5 $\pm$ 5.5	97.2 $\pm$ 4.9	0.809
	Abnormal C1, n (%)	0 (0)	0 (0)	-
	Abnormal C2, n (%)	0 (0)	0 (0)	-
	Abnormal C3, n (%)	1 (3.3)	0 (0)	0.999
	Abnormal C4, n (%)	3 (10.0)	0 (0)	0.237
	Abnormal C5, n (%)	2 (6.7)	0 (0)	0.492
	Abnormal C6, n (%)	4 (13.3)	0 (0)	0.112
	Abnormal CES, n (%)	3 (10.0)	0 (0)	0.237
	Abnormal SOM, n (%)	0 (0)	0 (0)	-
	Abnormal VIS, n (%)	2 (6.7)	0 (0)	0.492
	Abnormal VEST, n (%)	2 (6.7)	0 (0)	0.492
	Abnormal PREF, n (%)	1 (3.3)	1 (3.3)	0.999
	SS C1, %, mean $\pm$ SD	96.3 $\pm$ 2.0	96.5 $\pm$ 1.8	0.829
	SS C2, %, mean $\pm$ SD	95.5 $\pm$ 2.3	94.8 $\pm$ 2.9	0.497
	SS C3, %, mean $\pm$ SD	94.8 $\pm$ 2.9	94.3 $\pm$ 3.4	0.682
	SS C4, %, mean $\pm$ SD	85.8 $\pm$ 5.2	78.2 $\pm$ 8.3	0.704
	SS C5, %, mean $\pm$ SD	78.2 $\pm$ 7.8	76.1 $\pm$ 7.8	0.505
	SS C6, %, mean $\pm$ SD	75.1 $\pm$ 8.1	72.7 $\pm$ 14.3	0.607

ERA: early rheumatoid arthritis; SD: standard deviation; C1-C6: condition 1-6; CES: composite equilibrium score; SOM: somatosensory ratio; VIS: visual ratio; VEST: vestibular ratio; PREF: preferential ratio; SS: strategy score.

Supplementary Table S2. Equilibrium scores in conditions C1-C6 according to joint involvement.

	Hips			Knees			Ankles			Feet		
	Involved	Not involved	<i>p</i>	Involved	Not involved	<i>p</i>	Involved	Not involved	<i>p</i>	Involved	Not involved	<i>p</i>
C1 , %, mean ± SD	93.3 ± 1.9	94.6 ± 1.6	0.294	93.9 ± 1.4	94.2 ± 1.8	0.257	94.4 ± 2.4	94.6 ± 1.2	0.779	94.7 ± 1.5	94.4 ± 1.8	0.637
C2 , %, mean ± SD	92.8 ± 0.2	93.2 ± 2.6	0.414	93.7 ± 2.4	92.7 ± 2.6	0.154	92.2 ± 3.3	93.7 ± 1.9	0.373	93.4 ± 2.1	92.9 ± 3.0	0.759
C3 , %, mean ± SD	92.5 ± 2.6	93.2 ± 3.3	0.556	93.5 ± 4.0	92.9 ± 2.5	0.400	92.9 ± 3.0	93.3 ± 3.4	0.880	92.8 ± 3.2	93.6 ± 3.2	0.637
C4 , %, mean ± SD	75.3 ± 10.4	81.0 ± 7.8	0.506	82.0 ± 5.9	79.5 ± 9.4	0.951	75.9 ± 9.4	83.0 ± 6.0	0.082	80.4 ± 8.6	80.9 ± 7.3	0.759
C5 , %, mean ± SD	65.3 ± 0.0	67.1 ± 10.1	0.506	66.1 ± 9.3	67.7 ± 10.3	0.580	66.6 ± 7.5	67.1 ± 7.5	0.713	66.3 ± 10.2	67.7 ± 9.5	0.697
C6 , %, mean ± SD	64.3 ± 4.7	62.8 ± 12.2	0.966	62.9 ± 10.4	62.9 ± 13.2	0.667	61.5 ± 14.0	67.1 ± 10.9	0.948	62.5 ± 13.9	63.3 ± 9.4	0.667

C1-C6: condition 1-6, SD: standard deviation.

Supplementary Table S3. Demographics, disease-related characteristics, equilibrium scores and ratios according to subjective postural instability.

	Patient-reported postural instability	Patient-reported preserved balance	<i>p</i>
n	13	17	-
Age, years, mean ± SD	51.7 ± 13.5	47.2 ± 14.4	0.493
Height, m, mean ± SD	166.3 ± 7.5	164.3 ± 9.0	0.238
BMI, kg/m ² , mean ± SD	24.8 ± 2.6	25.7 ± 5.2	0.638
Female, n (%)	13 (100.0)	14 (82.4)	0.238
RF positive, n (%)	10 (76.9)	10 (58.8)	0.440
ACPA positive, n (%)	8 (61.5)	13 (76.5)	0.443
TJC, median (IQR)	3.0 (2.0-12.25)	5.0 (1.0-9.0)	0.719
SJC, median (IQR)	3.5 (2.3-8.3)	3.0 (1.0-7.0)	0.726
Hip involvement, n (%)	1 (7.7)	1 (5.9)	0.999
Knee involvement, n (%)	5 (38.5)	9 (52.9)	0.431
Ankle involvement, n (%)	6 (46.2)	4 (23.5)	0.193
Feet involvement, n (%)	5 (38.5)	11 (64.7)	0.153
CRP, mg/l, median (IQR)	11.6 (2.0-19.5)	3.4 (2.0-14.0)	0.732
ESR, mm/h, median ± SD	32.4 ± 14.5	35.8 ± 17.0	0.646
VAS pain, cm, median (IQR)	6.0 ± 2.4	5.9 ± 1.9	0.432
VAS general health, cm, mean ± SD	5.8 (4.5-8.3)	5.0 (4.5-8.0)	0.842
DAS28, mean ± SD	4.4 ± 1.2	3.5 ± 2.1	0.284
HAQ-DI, mean ± SD	1.451 ± .496	.899 ± .652	0.022
C1, %, mean ± SD	94.1 ± 1.9	94.9 ± 1.4	0.216
C2, %, mean ± SD	92.3 ± 3.0	93.8 ± 2.0	0.111
C3, %, mean ± SD	93.4 ± 3.4	93.0 ± 3.2	0.792
C4, %, mean ± SD	77.6 ± 8.0	82.9 ± 7.2	0.066
C5, %, mean ± SD	62.5 ± 9.4	70.3 ± 8.8	0.026
C6, %, mean ± SD	56.9 ± 12.2	67.5 ± 9.5	0.013
CES, %, mean ± SD	75.4 ± 5.4	80.7 ± 5.5	0.016
SOM, %, mean ± SD	98.1 ± 2.0	98.9 ± 1.6	0.245
VIS, %, mean ± SD	82.4 ± 7.8	87.4 ± 6.8	0.081
VEST, %, mean ± SD	66.5 ± 10.1	74.1 ± 8.8	0.036
PREF, %, mean ± SD	97.1 ± 1.9	97.8 ± 4.2	0.748

SD standard deviation; BMI: body mass index; RF: rheumatoid factor; ACPA: anti-citrullinated protein antibodies; TJC: tender joints count; IQR: interquartile range; SJC: swollen joints count; CRP: C-reactive protein; ESR: erythrocyte sedimentation rate; VAS: visual analogue scale; GH: global health; DAS28: Disease Activity Score for 28 joints; HAQ-DI: Health Assessment Questionnaire Disability Index; C1-C6: condition 1-6; CES: composite equilibrium score; SOM: somatosensory ratio; VIS: visual ratio; VEST: vestibular ratio; PREF: preferential ratio.