

## SUPPLEMENTARY MATERIAL

Supplementary Table 1. Journal characteristics

	<b>Publisher</b>	<b>Country of publication</b>	<b>2016 Impact Factor</b>	<b>Relevant affiliated society</b>	<b>Issues per year</b>	<b>Contents grouped by disease</b>	<b>Total number of articles included, n</b>	<b>Number of included articles per issue, mean (SD)</b>
Annals of the Rheumatic Diseases	BMJ Publishing Group Ltd	United Kingdom	12.811	European League Against Rheumatism	12	No	1374	13.2 (9.4)
Arthritis & Rheumatology	John Wiley & Sons	United States	6.918	American College of Rheumatology	12	Yes	1367	12.5 (7.6)
Rheumatology	Oxford University Press	United Kingdom	4.818	British Society for Rheumatology	12	No	1158	10.2 (5.7)
Seminars in Arthritis and Rheumatism	Elsevier	United States	4.498	None	6	Yes	403	7.3 (4.1)
Joint Bone Spine	Elsevier	United States	3.329	French Society of Rheumatology	6	No	239	4.6 (2.6)
Arthritis Care & Research	John Wiley & Sons	United States	3.319	American College of Rheumatology, Association of Rheumatology Health Professionals	12	Yes	1098	9.6 (5.4)
The Journal of Rheumatology	Journal of Rheumatology Publishing Company Limited	Canada	3.150	Canadian Rheumatology Association	12	Yes	1148	10.3 (6.1)

**Supplementary Table 2. Number of articles within each disease category for crystal arthritis, miscellaneous and other connective tissue diseases**

	Frequency	Percent
<b><i>Crystal arthritis (n = 269)</i></b>		
Gout	260	96.7
Calcium crystal diseases	9	3.3
<b><i>Miscellaneous Disease (n = 277 articles)</i></b>		
Regional musculoskeletal syndromes	48	17.3
Osteoporosis	22	7.9
IgG4-related disease	20	7.2
FMF	20	7.2
Polymyalgia rheumatica	19	6.9
CAPS	16	5.8
Still's disease	10	3.6
Septic arthritis	8	2.9
Fibrosis	8	2.9
Sarcoidosis	7	2.5
Chikungunya Virus	7	2.5
SAPHO syndrome	6	2.2
TRAPS	5	1.8
Polychondritis	5	1.8
Ehlers-Danlos Syndrome	4	1.4
Lyme disease	4	1.4
Alkaptonuria	4	1.4
Hemophagocytic syndromes	3	1.1
Vertebral fractures	2	0.7
Uveitis	2	0.7
Undifferentiated arthritis	2	0.7
Tuberculosis	2	0.7
Periodic fever syndrome	2	0.7
Löfgren syndrome	2	0.7
Erdheim-Chester disease	2	0.7
Dupuytren's disease	2	0.7
ACPA-negative undifferentiated arthritis	1	0.4
Yellow fever	1	0.4
Whipple disease	1	0.4
Vertebral endplate lesions	1	0.4
Tumoral calcinosis	1	0.4
Tenosynovial giant cell tumor	1	0.4
Systemic autoinflammatory disease (SAID)	1	0.4
Schnitzler's syndrome	1	0.4
Ribbing disease	1	0.4
Receptor-associated periodic syndrome	1	0.4
Pyogenic sterile arthritis pyoderma gangrenosum and acne (PAPA) syndrome	1	0.4
Pyogenic arthritis	1	0.4
Primary angiitis of the CNS	1	0.4
Preeclampsia	1	0.4
Pigmented villonodular synovitis	1	0.4
Periodic fever, aphthous stomatitis, pharyngitis, and cervical adenitis (PFAPA) syndrome	1	0.4

Paraneoplastic rheumatic syndrome	1	0.4
Palindromic rheumatism	1	0.4
Paget's disease	1	0.4
Osteonecrosis	1	0.4
Osteomyelitis	1	0.4
NOD2-associated autoinflammatory diseases	1	0.4
Muckle-wells syndrome	1	0.4
Mikulicz's disease	1	0.4
Mevalonate kinase deficiency	1	0.4
Medial meniscal tears	1	0.4
Macrophage activation syndrome	1	0.4
Leri's pleonosteosis	1	0.4
Kikuchi-Fujimoto disease	1	0.4
Joint hypermobility syndrome	1	0.4
Immune reconstitution inflammatory syndrome	1	0.4
Hereditary recurrent fever syndromes	1	0.4
Hereditary haemochromatosis	1	0.4
Haploinsufficiency of A20	1	0.4
Glomerulonephritis	1	0.4
Gaucher disease	1	0.4
Femoral fractures	1	0.4
Fabry disease	1	0.4
Ebola virus	1	0.4
Discitis	1	0.4
Chronic graft-versus-host disease	1	0.4
Blau syndrome	1	0.4
Biphosphate trochanteric fracture	1	0.4
Amyloidosis	1	0.4
Aicardi-Goutières syndrome	1	0.4
<b><i>Other connective tissue disease (n = 339 articles)</i></b>		
Sjogren's syndrome	174	51.3
Inflammatory myositis	115	33.9
Antiphospholipid syndrome	41	12.1
Mixed connective tissue disease	7	2.1
CTD-associated interstitial lung disease	1	0.3
Undifferentiated connective tissue disease	1	0.3

**Supplementary Table 3. Difference in distribution of standard article placement indices (SAPI) for each author gender, geographical region, industry funding category and research design**

	N (%)	SAPI, mean (SD)	Two-sample Kolmogorov-Smirnov Z test Effect size (KS D)	FDR-adjusted P
<b>First author gender</b>				
Female	3517 (52.0%)	0.53 (0.29)	0.03	0.19
Male	3250 (48.0%)	0.52 (0.29)		
<b>Last author gender</b>				
Female	2359 (34.8%)	0.52 (0.28)	0.04	0.017
Male	4412 (65.2%)	0.53 (0.29)		
<b>Geographical region</b>				
Europe	3486 (51.4%)	0.53 (0.29)	(reference)	-
North America	2177 (32.1%)	0.52 (0.29)	0.02	0.57
Other	1124 (16.6%)	0.52 (0.29)	0.03	0.93
<b>Industry funding</b>				
Industry funded and initiated	640 (9.4%)	0.42 (0.28)	0.19	<0.001
Industry funded and investigator initiated	596 (8.8%)	0.45 (0.29)	0.17	<0.001
Not industry funded	5551 (82.0%)	0.55 (0.29)	(reference)	-
<b>Research design</b>				
Basic science	1395 (20.6%)	0.64 (0.28)	(reference)	-
Other clinical research	4466 (65.8%)	0.51 (0.28)	0.22	<0.001
Randomised controlled trials	488 (7.2%)	0.41 (0.29)	0.34	<0.001
Systematic literature reviews/meta-analyses	438 (6.4%)	0.49 (0.29)	0.24	<0.001

*SAPI = standard articles placement index. Lower SAPI scores equate to articles ordered at the front of issues, while higher SAPI scores equate to articles ordered at the end of issues.*

**Supplementary Table 4. Number of articles appearing in at least one article in first and last three articles of an issue for author gender, geographical region of affiliated institution, industry funding category, and disease category**

	Total articles	First three N	% of total	Last three N	% of total	Odds ratio (OR) <sup>a</sup>	95% CI for OR	P <sup>b</sup>
<b>First author gender</b>								
Female	3517	537	15.3%	586	16.7%	0.90	0.79, 1.02	0.17
Male	3250	557	17.1%	509	15.7%	1.11	0.98, 1.27	0.17
<b>Last author gender</b>								
Female	2359	393	16.7%	355	15.0%	1.13	0.97, 1.32	0.17
Male	4412	705	16.0%	737	16.7%	0.95	0.85, 1.01	0.37
<b>Geographical region</b>								
Europe	3486	573	16.4%	556	16.0%	1.04	0.91, 1.18	0.68
North America	2177	362	16.6%	352	16.2%	1.03	0.88, 1.21	0.68
Other	1124	163	14.5%	190	16.9%	0.83	0.66, 1.05	0.35
<b>Industry funding</b>								
Industry-funded and initiated	640	104	16.3%	109	17.0%	0.95	0.70, 1.27	0.71
Industry-funded and investigator-initiated	596	87	14.6%	111	18.6%	0.75	0.55, 1.01	0.09
Not industry-funded	5551	907	16.3%	878	15.8%	1.04	0.94, 1.15	0.09
<b>Research type</b>								
Basic science	1395	106	7.6%	366	26.2%	0.23	0.18, 0.29	<0.001
Other clinical research	4466	757	17.0%	606	13.6%	1.30	1.16, 1.46	<0.001
Randomised controlled trials	488	129	26.4%	53	10.9%	2.95	2.08, 4.18	<0.001
Systematic literature reviews / meta-analyses	438	106	24.2%	73	16.7%	1.60	1.14, 2.23	0.003
<b>Disease category</b>								
Ankylosing spondylitis	496	47	9.5%	40	8.1%	1.19	0.77, 1.86	0.51
Crystal arthritis <sup>c</sup>	269	29	10.8%	72	26.8%	0.33	0.21, 0.53	<0.001
Miscellaneous	277	28	10.1%	103	37.2%	0.19	0.12, 0.30	<0.001
Not disease-specific	422	52	12.3%	121	28.7%	0.35	0.24, 0.50	<0.001
Osteoarthritis	773	81	10.5%	82	10.6%	0.99	0.71, 1.37	0.934
Other connective tissue diseases	339	23	6.8%	56	16.5%	0.37	0.22, 0.61	<0.001
Pediatric rheumatology	443	37	8.4%	172	38.8%	0.14	0.10, 0.21	<0.001
Pain syndromes	143	12	8.4%	53	37.1%	0.16	0.08, 0.31	<0.001
Psoriatic arthritis <sup>c</sup>	242	26	10.7%	23	9.5%	1.15	0.63, 2.07	0.71
Rheumatoid arthritis	1946	692	35.6%	170	8.7%	5.77	4.80, 6.92	<0.001
Systemic lupus erythematosus	642	30	4.7%	62	9.7%	0.46	0.29, 0.72	0.001
Systemic sclerosis	433	18	4.4%	79	18.2%	0.19	0.11, 0.33	<0.001
Vasculitis	362	23	6.4%	65	18.0%	0.31	0.19, 0.51	<0.001

<sup>a</sup>The odds of being in at least one article in the first three places of an issue; <sup>b</sup>FDR-adjusted Mid-P exact P-value; <sup>c</sup>One article in each of 'Crystal arthritis' and 'Psoriatic arthritis' came from issues which included 5 articles and were therefore counted in both the 'first' and 'last' three categories.

**Supplementary Table 5. Difference in cumulative density function distribution of standard article placement indices (SAPI) between journals with and without contents grouped by disease for articles with related editorials and for each disease category**

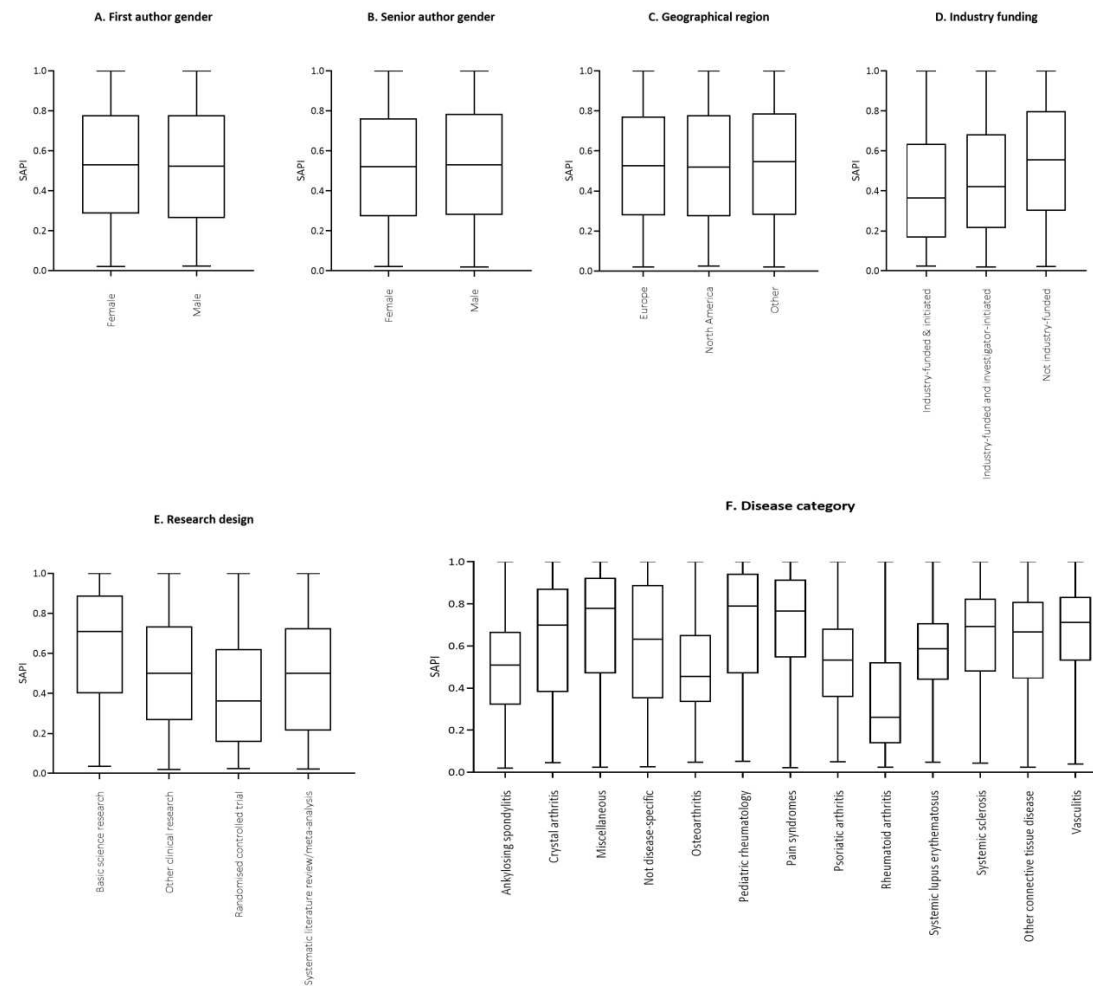
	Journals with contents not grouped by disease			Journals with contents grouped by disease			Two-sample Kolmogorov-Smirnov Z test <sup>b</sup>	
	N (%)	SAPI <sup>a</sup>	SD	N (%)	SAPI <sup>a</sup>	SD	Effect size (KS D)	FDR-adjusted P
		Mean			Mean			
Ankylosing spondylitis	228 (8.2%)	0.49	0.28	268 (6.7%)	0.52	0.19	0.20	<0.001
Crystal arthritis	137 (4.9%)	0.49	0.28	132 (3.3%)	0.78	0.20	0.50	<0.001
Miscellaneous	152 (5.5%)	0.62	0.30	125 (3.1%)	0.76	0.26	0.29	<0.001
Not disease-specific	178 (6.4%)	0.53	0.30	244 (6.1%)	0.66	0.29	0.22	<0.001
Osteoarthritis	231 (8.3%)	0.55	0.27	542 (13.5%)	0.47	0.22	0.20	<0.001
Other connective tissue diseases	167 (6.0%)	0.49	0.29	172 (4.3%)	0.70	0.17	0.36	<0.001
Pediatric rheumatology	121 (4.4%)	0.48	0.26	322 (8.0%)	0.77	0.25	0.50	<0.001
Pain syndromes	41 (1.5%)	0.54	0.35	102 (2.5%)	0.75	0.21	0.36	0.001
Psoriatic arthritis	109 (3.9%)	0.48	0.27	133 (3.3%)	0.56	0.20	0.22	0.005
Rheumatoid arthritis	881 (31.8%)	0.51	0.29	1065 (26.5%)	0.23	0.20	0.49	<0.001
Systemic lupus erythematosus	193 (7.0%)	0.56	0.28	449 (11.2%)	0.58	0.17	0.19	<0.001
Systemic sclerosis	182 (6.6%)	0.60	0.30	251 (6.3%)	0.68	0.18	0.26	<0.001
Vasculitis	151 (5.4%)	0.51	0.28	211 (5.3%)	0.75	0.14	0.50	<0.001

<sup>a</sup>Lower SAPI scores equate to articles ordered at the front of issues, while higher SAPI scores equate to articles ordered at the end of issues. <sup>b</sup>Test of difference in distribution of SAPI between journals with and without contents grouped by disease sections.

**Supplementary Table 6. Comparison of median standardised article placement index (SAPI) between genders of first and last authors, geographical regions, industry funding categories and disease categories.**

	N of articles	SAPI <sup>a</sup>		Difference in median SAPI	
		Median (IQR)	Min-max	Effect size (Cohen's d)	FDR-adjusted P- value
<b>First author gender</b>					
Female	3517	0.53 (0.49)	0.02-1.00		
Male	3250	0.52 (0.51)	0.02-1.00	0.04	0.11
<b>Last author gender</b>					
Female	2359	0.52 (0.49)	0.02-1.00		
Male	4412	0.23 (0.51)	0.02-1.00	0.05	0.07
<b>Geographical region</b>					
Europe	3486	0.53 (0.50)	0.02-1.00		
North America	2177	0.51 (0.51)	0.02-1.00	0.02	0.26
Other	1124	0.56 (0.51)	0.02-1.00		
<b>Industry funding</b>					
Industry funded and initiated	640	0.36 (0.47)	0.02-1.00		
Industry funded and investigator initiated	596	0.42 (0.47)	0.02-1.00	0.30	<0.001
Not industry funded	5551	0.56 (0.49)	0.02-1.00		
<b>Research type</b>					
Basic science	1395	0.71 (0.28)	0.03-1.00		
Other clinical research	4466	0.50 (0.47)	0.02-1.00		
Randomised controlled trials	488	0.36 (0.46)	0.02-1.00	0.19	<0.001
Systematic literature reviews/meta-analyses	438	0.50 (0.51)	0.02-1.00		
<b>Disease category</b>					
Ankylosing spondylitis	496	0.50 (0.35)	0.02-1.00	0.53	<0.001
Crystal arthritis	269	0.70 (0.50)	0.05-1.00	0.59	<0.001
Miscellaneous	277	0.78 (0.45)	0.02-1.00	0.68	<0.001
Not disease-specific	422	0.63 (0.54)	0.03-1.00	0.64	<0.001
Osteoarthritis	773	0.45 (0.32)	0.05-1.00	0.58	<0.001
Other connective tissue diseases	339	0.67 (0.37)	0.02-1.00	0.66	<0.001
Pediatric rheumatology	443	0.79 (0.47)	0.05-1.00	0.86	<0.001
Pain syndromes	143	0.75 (0.37)	0.02-1.00	0.51	<0.001
Psoriatic arthritis	242	0.53 (0.33)	0.05-1.00	0.43	<0.001
Rheumatoid arthritis	1946	0.26 (0.39)	0.02-1.00	(reference category)	-
Systemic lupus erythematosus	642	0.58 (0.27)	0.05-1.00	0.78	<0.001
Systemic sclerosis	433	0.69 (0.35)	0.04-1.00	0.79	<0.001
Vasculitis	362	0.71 (0.30)	0.04-1.00	0.74	<0.001

<sup>a</sup>Lower SAPI scores equate to articles ordered at the front of issues, while higher SAPI scores equate to articles ordered at the end of issues.



**Supplementary Figure 1.** Box plots showing differences in standardised article placement indices (SAPI) for first author gender (A.), senior author gender (B.), industry funding (C.), first author's geographic region of affiliated institution (D.), research design (E.) and disease category (F.)