Supplementary Material

Table S1 Eligibility criteria (PICOS) for the SLR

Criteria	Inclusion criteria	Exclusion criteria
Population	• Adults (aged ≥ 18 years) with active PsA despite treatment with csDMARDs, NSAIDs, and/or previous anti-TNF therapy and/or previous biologic therapy • Subgroups of patients with PsA in psoriasis studies will be included, provided that all patients in the study were adults (aged ≥ 18 years) with active psoriasis despite topical treatment, phototherapy, and/or	• Children • Participants experiencing active, ongoing inflammatory diseases other than PsA
Intervention	• Secukinumab • Etanercept (Enbrel®) • Adalimumab (Humira®) • Infliximab (Remicade®) • Ustekinumab (Stelara®) • Golimumab (Simponi®) • Certolizumab (Cimzia®) • Apremilast (Otezla®) • Ixekizumab[a]	• Nonbiologic treatments for PsA other than apremilast (e.g., csDMARDs)
Comparators	• Interventions listed above • Methotrexate • Placebo	

Criteria	Inclusion criteria	Exclusion criteria
Outcomes (sift 2 only)[b]	Efficacy measurements • Proportion of patients achieving ACR 20, ACR 50 and ACR 70 responses • Proportion of patients achieving PASI 50, PASI 75, and PASI 90 responses in the subgroup of patients who have skin involvement with PsA • PsARC • Response per the DAS28-CRP • HRQoL outcomes (HAQ-DI, SF-36, DLQI; change in HAQ conditional upon PsARC response will be captured) • HRQoL assessments, including the EQ-5D • Signs and symptoms of PsA (including swollen joint counts, tender joint counts, CRP levels, enthesitis and dactylitis scores, mTSS, and VdH score) Safety outcomes reported at study end-point • Overall AEs • Discontinuations due to AEs • Serious AEs (e.g., cardiovascular events, death, malignancies [melanoma and lymphoma] and serious infections [e.g., tuberculosis and herpes]) • Individual safety outcomes of interest may	

Criteria	Inclusion criteria	Exclusion criteria
	include opportunistic infections, neutropenia, malignancies, hypersensitivity, and major adverse cardiac events	
Study design	• Randomized, controlled, prospective clinical trials, including phase 2 and phase 3 • Systematic reviews, meta-analyses and pooled analyses (sift 1 only)[c]	• Nonrandomized trials • Preclinical studies • Phase 1 studies • Long-term follow-up studies • Prospective observational studies • Prognostic studies • Retrospective studies • Case reports • Commentaries and letters • Consensus reports • Nonsystematic reviews

ACR 20/50/70 20%/50%/70% or greater improvement in the American College of Rheumatology response criteria, *AE* adverse event, *csDMARD* conventional synthetic disease-modifying antirheumatic drug, *CRP* C- reactive protein, *DAS28-CRP* 28-joint Disease Activity Score using CRP as acute phase reactant, *DLQI* Dermatology Life Quality Index, *DMARD* Disease-modifying Antirheumatic Drug, *EQ-5D* 5-Dimension EuroQol questionnaire, *HAQ* Health Assessment Questionnaire, *HAQ-DI* health assessment questionnaire disability index, *HRQoL* health-related quality of life, *mTSS* modified total Sharp score, *NSAID* nonsteroidal anti-inflammatory drug, *PASI 50/75/90*, 50%/75%/90% or greater improvement in Psoriasis Area and Severity Index score, *PsA* psoriatic arthritis, *PsARC* Psoriatic Arthritis Response Criteria, *SF-36* 36-item Short-Form Health Survey, *SLR* Systematic Literature Review, *TNF* Tumor Necrosis Factor, *VdH* Van der Heijde

[a] Ixekizumab was included in the search terms, but because ixekizumab has not been approved for treatment, it was not considered in the results

[b] Studies were only screened for outcomes during the full-text review; at the title/abstract screening stage, any outcomes were permitted

[c] Systematic reviews and meta-analyses were included at the title/abstract screening stage and used for identification of any additional primary studies not identified through the database searches, but were excluded during the full-text review

Figure S1 PRISMA flow chart. The rules for this SLR were set a priori (as defined in Table S1), yielding 29 trials. A second filter was then applied, i.e., studies that contain either adalimumab or secukinumab. *MAIC* Matching-Adjusted Indirect Comparison, *PRISMA* Preferred Reporting Items for Systematic Reviews and Meta-Analyses

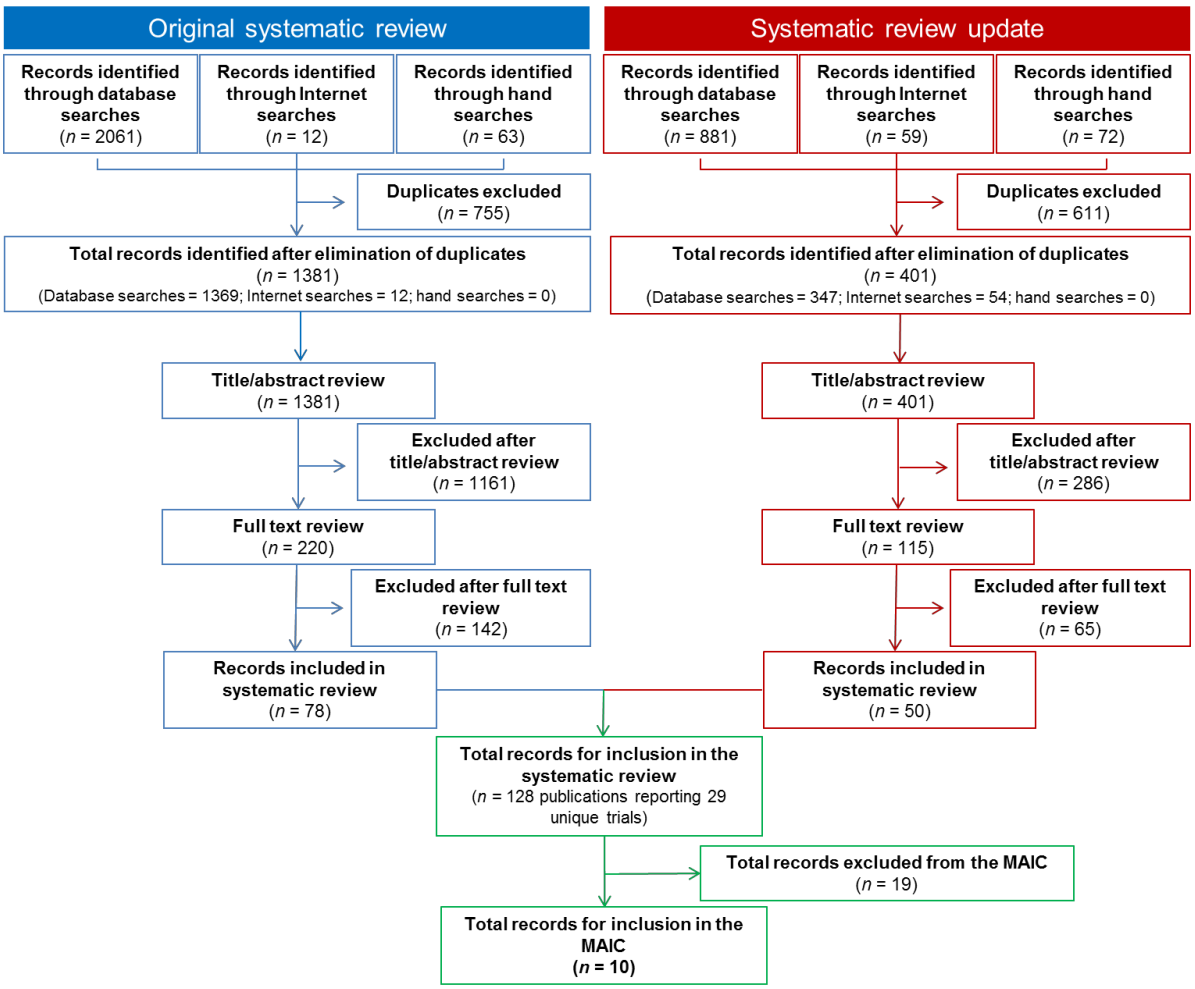

Table S2 Trials identified by the SLR and the reasons for their inclusion/exclusion in this MAIC

Trial	Intervention	Comparator	Population	Primary study reference	Secondary reference(s)	Study included in MAIC analysis?
ADEPT	ADA 40 mg Q2W	Placebo	315 adults with moderately to severely active PsA, and a history of an inadequate response or intolerance to NSAIDs for PsA	Mease 2005 (15)	Gladman 2007 (65) Gladman 2007 (16) Mease 2009 (17)	**Yes**
Behrens 2014	ADA and methotrexate	ADA	1455 patients with active PsA	Behrens 2014 (24)	None	**No** – observational study
CLEAR (subanalysis)	SEC 300 mg s.c. at weeks 0, 1, 2, 3, then Q4W from week 4	Ustekinumab 45 mg s.c. for Individuals ≤ 100 kg and 90 mg s.c. for individuals100 kg at weeks 0 and 4, then Q12W from week 16	CLEAR included 676 patients with moderate to severe psoriasis whose disease was inadequately controlled by topical treatment, phototherapy and/or previous systemic therapy. 123 patients had concomitant PsA	Gottlieb 2015 (66)	None	**No** – included patients with moderate to severe psoriasis, of whom a subgroup had concomitant PsA

Trial	Intervention	Comparator	Population	Primary study reference	Secondary reference(s)	Study included in MAIC analysis?
ERASURE (subanalysis)	SEC 300 mg or 150 mg at weeks 0, 1, 2, 3, and 4, then Q4W until week 48	Placebo	ERASURE included patients with moderate to severe psoriasis whose disease was poorly controlled by topical treatment, phototherapy and/or previous systemic therapy. 171 patients had concomitant PsA	Gottlieb 2013 (67) Gottlieb 2015 (66)	Blauvelt 2014 (68) Gottlieb 2014 (69) Philipp 2015 (70)	**No** – included patients with moderate to severe psoriasis, of whom a subgroup had concomitant PsA
FIXTURE (subanalysis)	SEC 300 mg or 150 mg QW for 4 weeks	Placebo	FIXTURE included patients with moderate to severe psoriasis whose disease was poorly controlled by topical treatment, phototherapy and/or previous systemic therapy. 196 patients had concomitant PsA	Gottlieb 2015 (66)	Gottlieb 2013 (71) Philipp 2015 (70) Sigurgeirsson 2014 (72)	**No** – included patients with moderate to severe psoriasis, of whom a subgroup had concomitant PsA
FUTURE 1	SEC 10 mg/kg i.v. at weeks 0, 2,	Placebo	606 patients with PsA and an inadequate response or intolerance	Mease 2015 (22)	Gottlieb 2014 (73) Mease 2014 (74)	**No** – loading method (i.v.) not

Trial	Intervention	Comparator	Population	Primary study reference	Secondary reference(s)	Study included in MAIC analysis?
	and 4, then 150 mg or 75 mg s.c. Q4W thereafter		to NSAIDs		Mease 2015 (75) Mease 2015 (76) Strand 2014 (77) van der Heijde 2014 (78)	licensed
FUTURE 2	SEC 300 mg or 150 mg QW from baseline to week 4, then Q4W	Placebo	298 patients with active PsA despite treatment with NSAIDs, csDMARDs, or anti-TNFs	McInnes 2015 (18)	Gottlieb 2015 (79) Gottlieb 2015 (80) Kavanaugh 2015 (81) McInnes 2014 (82) Mease 2015 (83) Rahman 2015 (84)	**Yes**
Genovese 2007	ADA 40 mg Q2W	Placebo	102 adults with active PsA and an inadequate response to csDMARDs	Genovese 2007 (85)	None	**No** – excluded because the double-blind period only lasted

Trial	Intervention	Comparator	Population	Primary study reference	Secondary reference(s)	Study included in MAIC analysis?
						until week 12
McInnes 2014	SEC 10 mg/kg i.v. at weeks 0 and 3	Placebo	42 patients with active PsA	McInnes 2014 (23)	McInnes 2012 (86) McInnes 2012 (87)	**No** – phase 2 study
Van Kuijk 2009	ADA for 4 weeks	Placebo	24 patients with active PsA	Van Kuijk 2009 (26)	De Groot 2012 (88)	No – restricted to synovial biopsy analyses

ADA adalimumab, *DMARD* disease-modifying antirheumatic drug, *i.v.* intravenously, *MAIC* Matching-Adjusted Indirect Comparison, *NSAID* nonsteroidal anti-inflammatory drug, *PsA* psoriatic arthritis, *Q2W* every 2 weeks, *Q12W* every 12 weeks, *Q4W* every 4 weeks, *QW* once weekly, *s.c.* subcutaneously, *SEC* secukinumab, *SLR* systematic literature review, *TNF* tumor necrosis factor

Table S3 Logistic regression model for ACR 20 response at week 48 (FUTURE 2 study: full analysis set)

Variable	**Category**	**Estimate (SE)**	**OR (95% CI)**	***P* value**
Intercept		0.541 (1.028)		0.5983
Age, years (estimated OR for a 10-unit change)		−0.013 (0.010)	0.882 (0.722, 1.076)	0.2165
Weight, kg (estimated OR for a 5-unit change)		−0.012 (0.006)	0.940 (0.883, 1.000)	0.0518
Sex	Female	−0.068 (0.269)	0.934 (0.551, 1.583)	0.8008
	Male	Ref		
Anti-TNF status	**Inadequate responder**	**−0.842 (0.249)**	**0.431 (0.265, 0.701)**	**0.0007**
	Naïve	Ref		
Methotrexate use at baseline	Yes	0.287 (0.242)	1.333 (0.830, 2.141)	0.2344
	No	Ref		
Corticosteroid use at baseline	Yes	−0.189 (0.326)	0.827 (0.437, 1.568)	0.5612
	No	Ref		
Presence of dactylitis	Yes	0.207 (0.260)	1.230 (0.739, 2.047)	0.4263
	No	Ref		

Variable	Category	Estimate (SE)	OR (95% CI)	*P* value
Presence of enthesitis	Yes	−0.518 (0.257)	0.596 (0.360, 0.985)	0.0435
	No	Ref		
Psoriasis affecting ≥ 3% of BSA	Yes	−0.070 (0.299)	0.933 (0.519, 1.677)	0.8163
	No	Ref		
PASI total score at baseline		0.027 (0.016)	1.027 (0.995, 1.060)	0.0978
HAQ-DI score at baseline		0.428 (0.272)	1.535 (0.901, 2.614)	0.1148
FACIT-Fatigue score at baseline		0.027 (0.013)	1.027 (1.001, 1.055)	0.0447
Swollen 76-joint count at baseline		0.010 (0.015)	1.010 (0.980, 1.040)	0.5157
Tender 78-joint count at baseline		−0.015 (0.009)	0.985 (0.967, 1.003)	0.1008
Patient's assessment of PsA pain intensity at baseline		0.012 (0.007)	1.012 (0.999, 1.025)	0.0674
CRP at baseline, mg/L		0.003 (0.007)	1.003 (0.989, 1.016)	0.6891
PsA duration at baseline, years		0.007 (0.016)	1.007 (0.976, 1.039)	0.6625

ACR American College of Rheumatology, *ACR 20* 20% improvement in the American College of Rheumatology response criteria, *BSA* body surface area, *CI* confidence interval, *CRP* C-reactive protein, *FACIT* Functional Assessment of Chronic Illness Therapy, *HAQ-DI* health assessment questionnaire disability index, *OR* odds ratio, *PASI* Psoriasis Area and Severity Index, *PsA* psoriatic arthritis, *SE* standard error, *TNF* tumor necrosis factor

Estimates (SE), 95% CI, and *P* values are from a logistic regression model with baseline factors including age, weight, sex, anti-TNF status, methotrexate use, corticosteroid use, presence of dactylitis, presence of enthesitis, psoriasis, PASI total score, HAQ-DI score, fatigue score, swollen joint count, tender joint count, pain assessment, CRP, and PsA duration

The model includes *N* = 362 observations. Missing ACR responders are considered as nonresponders

Table S4 Logistic regression model for ACR 50 response at week 48 (FUTURE 2 study: full analysis set)

Variable	**Category**	**Estimate (SE)**	**OR (95% CI)**	***P* value**
Intercept		−0.445 (1.061)		0.6750
Age, years (estimated OR for a 10-unit change)		−0.027 (0.011)	0.762 (0.619, 0.938)	0.0104
Weight, kg (estimated OR for a 5-unit change)		−0.011 (0.007)	0.945 (0.885, 1.010)	0.0954
Sex	Female	−0.144 (0.275)	0.866 (0.505, 1.483)	0.5997
	Male	Ref		
Anti-TNF status	**Inadequate responder**	**−0.774 (0.270)**	**0.461 (0.271, 0.784)**	**0.0042**
	Naïve	Ref		
Methotrexate use at baseline	Yes	0.178 (0.247)	1.194 (0.735, 1.940)	0.4730
	No	Ref		
Corticosteroid use at baseline	Yes	0.130 (0.333)	1.139 (0.593, 2.189)	0.6961
	No	Ref		
Presence of dactylitis	Yes	0.360 (0.261)	1.434 (0.860, 2.390)	0.1671
	No	Ref		

Variable	Category	Estimate (SE)	OR (95% CI)	*P* value
Presence of enthesitis	Yes	−0.418 (0.256)	0.658 (0.398, 1.088)	0.1026
	No	Ref		
Psoriasis affecting ≥ 3% of BSA	Yes	−0.120 (0.304)	0.887 (0.489, 1.608)	0.6925
	No	Ref		
PASI total score at baseline		0.031 (0.015)	1.031 (1.000, 1.063)	0.0472
HAQ-DI score at baseline		0.565 (0.283)	1.760 (1.011, 3.062)	0.0456
FACIT-Fatigue score at baseline		0.044 (0.014)	1.045 (1.016, 1.074)	0.0021
Swollen 76-joint count at baseline		0.018 (0.016)	1.018 (0.986, 1.051)	0.2789
Tender 78-joint count at baseline		−0.013 (0.010)	0.987 (0.967, 1.007)	0.2000
Patient's assessment of PsA pain intensity at baseline		0.008 (0.007)	1.008 (0.994, 1.021)	0.2567
CRP at baseline, mg/L		0.004 (0.007)	1.004 (0.991, 1.017)	0.5274
PsA duration at baseline, years		0.005 (0.017)	1.005 (0.973, 1.039)	0.7448

ACR American College of Rheumatology, *ACR 50* 50% improvement in the American College of Rheumatology response criteria, *BSA* body surface area, *CI* confidence interval, *CRP* C-reactive protein, *FACIT* Functional Assessment of Chronic Illness Therapy, *HAQ-DI* health assessment questionnaire disability index, *OR* odds ratio, *PASI* Psoriasis Area and Severity Index, *PsA* psoriatic arthritis, *SE* standard error, *TNF* tumor necrosis factor

Estimates (SE), 95% CI, and *P* values are from a logistic regression model with baseline factors including age, weight, sex, anti-TNF status, methotrexate use, corticosteroid use, presence of dactylitis, presence of enthesitis, psoriasis, PASI total score, HAQ-DI score, fatigue score, swollen joint count, tender joint count, pain assessment, CRP and PsA disease duration

The model includes *N* = 362 observations. Missing ACR responders are considered as nonresponders

Table S5 Logistic regression model for ACR 70 response at week 48 (FUTURE 2 study: full analysis set)

Variable	**Category**	**Estimate (SE)**	**OR (95% CI)**	***P* value**
Intercept		1.147 (1.229)		0.3508
Age, years (estimated OR for a 10-unit change)		−0.027 (0.012)	0.766 (0.601, 0.977)	0.0315
Weight, kg (estimated OR for a 5-unit change)		−0.016 (0.008)	0.925 (0.855, 1.001)	0.0516
Sex	Female	−0.279 (0.320)	0.756 (0.404, 1.416)	0.3830
	Male	Ref		
Anti-TNF status	**Inadequate responder**	**−0.991 (0.345)**	**0.371 (0.189, 0.729)**	**0.0040**
	Naïve	Ref		
Methotrexate use at baseline	Yes	−0.033 (0.289)	0.967 (0.548, 1.706)	0.9085
	No	Ref		
Corticosteroid use at baseline	Yes	0.351 (0.383)	1.420 (0.670, 3.009)	0.3599
	No	Ref		
Presence of dactylitis	Yes	0.198 (0.302)	1.219 (0.674, 2.205)	0.5123
	No	Ref		

Variable	Category	Estimate (SE)	OR (95% CI)	*P* value
Presence of enthesitis	Yes	0.010 (0.298)	1.010 (0.563, 1.813)	0.9738
	No	Ref		
Psoriasis affecting ≥ 3% of BSA	Yes	−0.388 (0.353)	0.678 (0.340, 1.354)	0.2708
	No	Ref		
PASI total score at baseline		0.031 (0.017)	1.031 (0.997, 1.066)	0.0707
HAQ-DI score at baseline		0.473 (0.332)	1.605 (0.838, 3.075)	0.1536
FACIT-Fatigue score at baseline		0.010 (0.016)	1.010 (0.978, 1.043)	0.5313
Swollen 76-joint count at baseline		0.011 (0.020)	1.011 (0.972, 1.052)	0.5853
Tender 78-joint count at baseline		−0.022 (0.013)	0.978 (0.953, 1.004)	0.0920
Patient's assessment of PsA pain intensity at baseline		−0.003 (0.008)	0.997 (0.982, 1.012)	0.6993
CRP at baseline, mg/L		0.003 (0.007)	1.003 (0.989, 1.017)	0.6774
PsA duration at baseline, years		−0.006 (0.021)	0.994 (0.955, 1.035)	0.7728

ACR American College of Rheumatology, *ACR 70* 70% improvement in the American College of Rheumatology response criteria, *BSA* body surface area, *CI* confidence interval, *CRP* C-reactive protein, *FACIT* Functional Assessment of Chronic Illness Therapy, *HAQ-DI* health assessment questionnaire disability index, *OR* odds ratio, *PASI* Psoriasis Area and Severity Index, *PsA* psoriatic arthritis, *SE* standard error, *TNF* tumor necrosis factor

Estimates (SE), 95% CI, and *P* values are from a logistic regression model with baseline factors including age, weight, sex, anti-TNF status, methotrexate use, corticosteroid use, presence of dactylitis, presence of enthesitis, psoriasis, PASI total score, HAQ-DI score, fatigue score, swollen joint count, tender joint count, pain assessment, CRP, and PsA duration

The model includes *N* = 362 observations. Missing ACR responders are considered as nonresponders

Table S6 Baseline characteristics before and after matching in the sensitivity analysis

	Before matching						**After matching**			
	ADEPT		**FUTURE 2**				**FUTURE 2**			
	ADA 40 mg (*n* = 151)	**Placebo (*n* = 162)**	**SEC 150 mg (*n* = 100)**	**SEC 300 mg (*n* =100)**	**Placebo (*n* = 98)**	**Pooled SEC[a] (*n* = 299)**	**SEC 150 mg (ESS = 15)**	**SEC 300 mg (ESS = 25)**	**Placebo (ESS = 20)**	**Pooled SEC (ESS = 67)**
Demographics										
Age, years, mean (SD)	48.6 (12.5)	49.2 (11.1)	46.5 (11.7)	46.9 (12.6)	49.9 (12.5)	47.3 (11.9)	47.8 (6.6)	50.3 (8.2)	49.2 (7.1)	48.6 (7.2)
			P = 0.1826	*P* = 0.2940		*P* = 0.2826	*P* = 0.8075	*P* = 0.5126		*P* = 1.000
Weight, kg, mean (SD)	86.0 (20.6)	85.5 (16.5)	91.2 (19.8)	85.4 (18.4)	86.2 (19.8)	87.4 (19.7)	87.1 (10.0)	87.2 (10.7)	85.5 (9.4)	86.0 (10.7)
			P = 0.0479	*P* = 0.8140		*P* = 0.4837	*P* = 0.8386	*P* = 0.7764		*P* = 1.000
Female, *n* (%)	66 (43.7)	73 (45.1)	45 (45.0)	49 (49.0)	59 (60.2)	146 (48.8)	(40.3)[b]	(38.5)[b]	(45.1)[b]	(43.7)[b]
			P = 0.1826	*P* = 0.4101		*P* = 0.3041	*P* = 0.7822	*P* = 0.7288		*P* = 1.000
White, *n* (%)	147 (97.4)	152 (93.8)	90 (90.0)	96 (96.0)	94 (95.9)	276 (92.3)	(96.6)[b]	(99.3)[b]	(93.8)[b]	(97.4)[b]
			P = 0.0130	*P* = 0.5508		*P* = 0.0334	*P* = 0.3852	*P* = 0.4104		*P* = 1.000

Disease characteristics										
Psoriasis affecting ≥3%	70 (46.4)	70 (43.2)	58 (58.0)	41 (41.0)	43 (43.9)	149 (49.8)	(54.2)[b]	(35.1)[b]	(43.2)[b]	(46.4)[b]
BSA, *n* (%)			*P* = 0.0709	*P* = 0.4028		*P* = 0.4862	*P = 0.6057*	*P = 0.3348*		*P* = 1.000
PASI score, mean (SD)[c]	7.4 (6.0)	8.3 (7.2)	16.2 (14.3)	11.9 (8.4)	11.5 (8.3)	13.6 (11.6)	7.9 (2.0)	7.8 (3.0)	8.3 (4.2)	7.4 (2.3)
			P < 0.0001	*P* = 0.0014		*P* < 0.0001	*P* = 0.8056	*P* = 0.8089		*P* = 1.000
HAQ-DI score, mean	1.0 (0.6)	1.0 (0.7)	1.2 (0.6)	1.3 (0.6)	1.2 (0.7)	1.2 (0.6)	0.9 (0.3)	1.1 (0.4)	1.0 (0.4)	1.0 (0.3)
(SD)			*P* = 0.0103	*P* = 0.0001		*P* = 0.0009	*P* = 0.5254	*P* = 0.4229		*P* = 1.000
Presence of dactylitis, *n* (%)	117 (37.4)[d]		32 (32.0)	46 (46.0)	27 (27.6)	111 (37.1)	(24.7)[b]	(44.6)[b]	(37.4)	(37.4)[b]
			P = 0.4084	*P* = 0.1592		*P* = 0.9938	*P* = 0.4231	*P* = 0.5096		*P* = 1.000
Presence of enthesitis, *n* (%)	118 (37.7)[d]		64 (64.0)	56 (56.0)	65 (66.3)	188 (62.9)	(35.0)[b]	(34.6)[b]	(37.7)	(37.7)[b]
			P < 0.0001	*P* = 0.0044		*P* < 0.0001	*P* = 0.7360	*P* = 0.8672		*P* = 1.000
PsA duration, years, mean (SD)	9.8 (8.3)	9.2 (8.7)	6.5 (8.2)	7.4 (7.5)	7.3 (7.8)	6.8 (7.6)	12.1 (8.2)	8.4 (5.6)	9.2 (3.9)	9.8 (6.6)
							P = 0.3070	*P* = 0.4177		*P* = 1.000
SJC, mean (SD)	14.3 (12.2)	14.3 (11.1)	11.9 (10.0)	11.2 (7.8)	12.1 (10.6)	11.3 (9.0)	17.4 (8.5)	11.0 (3.5)	14.3 (5.6)	14.3 (6.8)
							P = 0.3385	*P* = 0.1819		*P* = 1.000
CRP, mg/dL, mean (SD)	1.4 (2.1)	1.4 (1.7)	1.4 (2.7)	1.1 (1.5)	0.8 (1.3)	1.1 (1.9)	1.1 (1.0)	1.9 (1.6)	1.4 (1.1)	1.4 (1.2)
							P = 0.5858	*P* = 0.2575		*P* = 1.000

Previous treatment										
Methotrexate use, *n* (%)	77 (51.0)	81 (50.0)	46 (46.0)	45 (45.0)	52 (53.1)	138 (46.2)	(54.8)[b]	(49.5)[b]	(50.0)[b]	(51.0)[b]
			P = 0.4385	*P* = 0.3523		*P* = 0.3318	*P* = 0.8627	*P* = 0.7816		*P* = 1.000
Anti-TNF-naïve, *n* (%)	151 (100)	162 (100)	63 (63.0)	67 (67.0)	63 (64.3)	195 (65.2)	15 (100)	25 (100)	20 (100)	67 (100)
			P < 0.0001	*P* < 0.0001		*P* < 0.0001	*P* = 1.000	*P = 1.000*		*P* = 1.000
Variables not used in the matching										
TJC (SD)	23.9 (17.3)	25.8 (18.0)	24.1 (19.4)	20.2 (13.3)	23.4 (19.0)	22.1 (16.5)	22.0 (10.4)	16.0 (5.2)	24.2 (10.8)	20.4 (8.3)
SF-36 PCS, mean (SD)	33.2 (9.9)	33.3 (9.8)	36.1 (8.1)	36.9 (8.0)	37.4 (8.8)	36.4 (8.1)	40.1 (3.7)	38.8 (4.6)	39.4 (5.3)	38.9 (4.0)
SF-36 MCS, mean (SD)	48.1 (10.2)	46.6 (12.2)	40.6 (11.5)	43.6 (12.1)	44.0 (10.7)	42.7 (11.7)	48.2 (7.1)	47.8 (7.1)	49.3 (4.0)	46.7 (6.6)
PGA (SD)	47.1 (23.2)	48.1 (21.2)	62.0 (19.5)	60.7 (18.9)	57.6 (19.8)	60.6 (19.2)	45.6 (11.4)	60.0 (11.0)	51.6 (10.4)	53.3 (11.7)
Patient's assessment of PsA pain, mean (SD)	51.1 (21.4)	48.8 (21.7)	58.9 (19.8)	57.7 (19.0)	55.4 (22.1)	57.8 (19.9)	45.1 (12.0)	54.4 (9.9)	57.4 (11.7)	51.5 (11.6)
FACIT-Fatigue score, mean (SD)	30.8 (12.1)	30.8 (12.2)	26.6 (11.6)	28.6 (12.6)	29.2 (11.8)	28.0 (11.6)	36.2 (6.1)	34.3 (7.5)	34.5 (6.6)	33.2 (6.7)

ADA adalimumab, *BSA* body surface area, *CRP* C-reactive protein, *ESS* effective sample size, *FACIT* Functional Assessment of Chronic Illness Therapy, *HAQ-DI* health assessment questionnaire disability index, *PASI* Psoriasis Area and Severity Index, *PsA* psoriatic arthritis, *SD* standard deviation, *SEC* secukinumab, *SF-36 MCS* 36-item Short-Form Health Survey − Mental Component Summary, *SF-36 PCS* 36-item Short-Form Health Survey − Physical Component Summary, *SJC* swollen joint count, *TJC* tender joint count, *TNF* tumor necrosis factor

All *P* values were calculated for secukinumab versus adalimumab using t-test for continuous variables and Chi-squared test for dichotomous variables

[a] Pooled SEC 75 mg (*n* = 99), 150 mg (*n* = 100), and 300 mg (*n* = 100) matched to ADA arm of ADEPT

[b] Integer population (*n*) values not available due to calculation of pooled SEC ESS using the equation: $\frac{(\sum_{i=1}^{n} \omega_i)^2}{\sum_{i=1}^{n} \omega_i^2}$

[c] PASI data were collected only for patients with psoriasis affecting ≥ 3% BSA

[d] Percentages of patients with dactylitis and enthesitis are presented for the entire ADEPT study (pooled active treatment and placebo arms)

Fig. S2 Calculating relative risks and odds ratios

Relative risk

Relative risk (RR) is defined as the probability of an event in the treatment group (a / (a + b)) divided by the probability of the same event occurring in the comparator group (c / (c + d)). We can estimate it as follows:

$$\mathrm{RR} = \frac{\frac{a}{a+b}}{\frac{c}{c+d}}$$

RRs were transformed by taking the natural logarithm and assuming that log relative risk follows a normal distribution. The variance of the log RR can be calculated as follows:

$$\mathrm{Var}\big(\ln(\mathrm{RR})\big) = \frac{1}{a} + \frac{1}{a+b} + \frac{1}{c} + \frac{1}{c+d}.$$

Odds ratio

An odds ratio (OR) is defined as the ratio of the odds of an event occurring in one group to the odds of it occurring in another group. An OR above 1 would constitute an improvement relative to the comparator group. ORs were calculated as follows:

$$\mathrm{OR} = \frac{ad}{bc}$$

The variance of the log odds ratio was estimated as follows:

$$\mathrm{Var}(\log(\mathrm{OR})) = \frac{1}{a} + \frac{1}{b} + \frac{1}{c} + \frac{1}{d}$$

Table S7 Comparison of relative risks and odds ratios in the principal analysis

Relative risk (SEC vs ADA)			**Odds ratio (SEC vs ADA)**		
ADA 40 mg, *n* = 151; PBO, *n* = 162			**ADA 40 mg, *n* = 151; PBO, *n* = 162**		
SEC 150 mg, ESS = 36; PBO, ESS = 27			**SEC 150 mg, ESS = 36; PBO, ESS = 27**		
SEC 300 mg, ESS = 38; PBO, ESS = 27			**SEC 300 mg, ESS = 38; PBO, ESS = 27**		
ACR 20	**ACR 50**	**ACR 70**	**ACR 20**	**ACR 50**	**ACR 70**
Week 12 placebo-adjusted (SEC 150 mg)					
0.69	0.91	0.68	1.02	0.93	0.70
(0.34, 1.43)	(0.23, 3.60)	(0.07, 6.22)	(0.32, 3.24)	(0.20, 4.37)	(0.07, 7.04)
Week 12 placebo-adjusted (SEC 300 mg)					
0.61	0.97	0.50	0.65	1.03	0.47
(0.29, 1.27)	(0.25, 3.79)	(0.05, 4.93)	(0.20, 2.08)	(0.22, 4.78)	(0.04, 5.23)
Week 16 (SEC 150 mg)					
1.34	**1.54**	0.90	**2.32**	2.09	0.88
(1.05, 1.70)	**(1.03, 2.30)**	(0.43, 1.92)	**(1.03, 5.25)**	(1.00, 4.36)	(0.35, 2.23)
***P* = 0.017**	***P* = 0.033**		***P* = 0.043**		
Week 16 (SEC 300 mg)					
1.18	**1.54**	0.91	1.51	**2.09**	0.89
(0.90, 1.54)	**(1.04, 2.29)**	(0.44, 1.89)	(0.72, 3.18)	**(1.02, 4.31)**	(0.36, 2.20)
	***P* = 0.030**			***P* = 0.045**	
Week 24 (SEC 150 mg)					
1.42	**1.50**	1.59	**3.21**	**2.20**	1.94
(1.15, 1.75)	**(1.07, 2.10)**	(0.95, 2.67)	**(1.32, 7.84)**	**(1.05, 4.62)**	(0.90, 4.22)
***P* = 0.001**	***P* = 0.019**		***P* = 0.010**	***P* = 0.036**	
Week 24 (SEC 300 mg)					
1.27	1.05	0.99	1.99	1.09	0.99
(1.00, 1.62)	(0.69, 1.62)	(0.52, 1.90)	(0.91, 4.36)	(0.53, 2.25)	(0.43, 2.31)
***P* = 0.048**					

Week 48 (SEC 150 mg)					
1.41	1.31	1.09	**3.04**	1.72	1.13
(1.14, 1.76)	(0.93, 1.83)	(0.64, 1.85)	**(1.27, 7.27)**	(0.82, 3.58)	(0.52, 2.46)
***P* = 0.002**			***P* = 0.013**		
Week 48 (SEC 300 mg)					
1.31	**1.41**	1.44	2.16	2.05	1.77
(1.03, 1.66)	**(1.03, 1.92)**	(0.93, 2.24)	(0.98, 4.75)	(0.99, 4.25)	(0.85, 3.68)
***P* = 0.027**	***P* = 0.032**				

ACR 20/50/70 20%/50%/70% improvement in the American College of Rheumatology response criteria, *ADA* adalimumab, *SEC* secukinumab

Data in brackets are 95% confidence intervals

P values (two-sided, bold when significant, i.e., $P < 0.05$) were derived from relative risk and odds ratios values using the *Z*-statistic

Table S8 Principal and sensitivity analyses using updated statistical methodology

Principal analysis (SEC vs ADA) ADA			**Sensitivity analysis (SEC vs ADA)**		
40 mg, *n* = 151; PBO, *n* = 162 SEC			**ADA 40 mg, *n* = 151; PBO, *n* = 162**		
150 mg, ESS = 36; PBO, ESS = 27 SEC			**SEC 150 mg, ESS = 15; PBO, ESS = 20**		
300 mg, ESS = 38; PBO, ESS = 27			**SEC 300 mg, ESS = 25; PBO, ESS = 20**		
ACR 20	**ACR 50**	**ACR 70**	**ACR 20**	**ACR 50**	**ACR 70**
Week 12 placebo-adjusted (SEC 150 mg)					
0.69	0.91	0.68	1.06	**10.44**	5.99
(0.34, 1.43)	(0.23, 3.60)	(0.07, 6.22)	(0.39, 2.92)	**(1.80, 60.56)**	(0.56, 63.79)
P = 0.321	*P* = 0.893	*P* = 0.730	*P* = 0.909	***P* = 0.009**	*P* = 0.138
Week 12 placebo-adjusted (SEC 300 mg)					
0.61	0.97	0.50	0.94	**16.01**	6.85
(0.29, 1.27)	(0.25, 3.79)	(0.05, 4.93)	(0.34, 2.61)	**(2.95, 86.84)**	(0.64, 73.92)
P = 0.188	*P* = 0.962	*P* = 0.550	*P* = 0.913	***P* = 0.001**[b]	*P* = 0.113
Week 16 (SEC 150 mg)					
1.34	**1.54**	0.90	**1.44**	**1.67**	0.91
(1.05, 1.70)	**(1.03, 2.30)**	(0.43, 1.92)	**(1.08, 1.92)**	**(0.99, 2.80)**	(0.30, 2.73)
***P* = 0.017**	***P* = 0.033**	*P* = 0.790	***P* = 0.014**	***P* = 0.055**	*P* = 0.861
Week 16 (SEC 300 mg)					
1.18	**1.54**	0.91	**1.35**	**1.63**	0.92
(0.90, 1.54)	**(1.04, 2.29)**	(0.44, 1.89)	**(1.03, 1.76)**	**(1.05, 2.52)**	(0.39, 2.20)
P = 0.239	***P* = 0.030**	*P* = 0.798	***P* = 0.030**	***P* = 0.029**	*P* = 0.857
Week 24 (SEC 150 mg)					
1.42	**1.50**	**1.59**	**1.46**	**1.52**	1.54
(1.15, 1.75)	**(1.07, 2.10)**	**(0.95, 2.67)**	**(1.12, 1.91)**	**(0.96, 2.42)**	(0.74, 3.23)
***P* = 0.001**[a]	***P* = 0.019**	***P* = 0.076**	***P* = 0.005**	***P* = 0.074**	*P* = 0.249

Week 24 (SEC 300 mg)					
1.27	1.05	0.99	**1.40**	1.08	1.00
(1.00, 1.62)	(0.69, 1.62)	(0.52, 1.90)	**(1.10, 1.78)**	(0.66, 1.79)	(0.47, 2.17)
***P* = 0.048**	*P* = 0.810	*P* = 0.983	***P* = 0.006**	*P* = 0.751	*P* = 0.991
Week 48 (SEC 150 mg)					
1.41	1.31	1.09	**1.41**	**1.55**	1.29
(1.14, 1.76)	(0.93, 1.83)	(0.64, 1.85)	**(1.05, 1.89)**	**(1.04, 2.30)**	(0.65, 2.56)
***P* = 0.002**	*P* = 0.118	*P* = 0.761	***P* = 0.022**	***P* = 0.029**	*P* = 0.463
Week 48 (SEC 300 mg)					
1.31	**1.41**	1.44	**1.45**	**1.66**	**1.68**
(1.03, 1.66)	**(1.03, 1.92)**	(0.93, 2.24)	**(1.15, 1.83)**	**(1.23, 2.24)**	**(1.05, 2.66)**
***P* = 0.027**	***P* = 0.032**	*P* = 0.105	***P* = 0.002**	***P* < 0.001[c]**	***P* = 0.029**

ACR 20/50/70 20%/50%/70% improvement in the American College of Rheumatology response criteria, *ADA* adalimumab, *RR* relative risk, *SEC* secukinumab

Data are RR (95% confidence interval). We avoid strict thresholds when interpreting statistical *P* values, as per the American Statistical Association definition (7 March 2016) (40) but loosely interpret *P* values (two-sided) between 0.1 and 0.001 as increasing evidence (weak to moderate) and *P* values (two-sided) < 0.001 as strong evidence (42). All *P* values (two-sided) are shown. Bold *P* value text cells denote all data where 0.1 > *P* < 0.001 (Higher outcomes for SEC compared with ADA), dashed border when evidence is weak–moderate (*P* at or below 0.01), full border when moderate (approaching 0.001). No values crossed the *P* < 0.001 threshold indicative for "strong" evidence, although several data points (below) were directly at this point and can be considered moderate–strong evidence. No observations were made to support higher outcomes for ADA compared with SEC using this methodology

[a] Actual value, *P* = 0.0011

[b] Actual value, *P* = 0.0013

[c] Actual value, *P* = 0.0010

Table S9 Sensitivity analysis: patient-reported outcome comparisons (LOCF)

	Week 12, placebo-adjusted			**Week 24**			**Week 48**		
	ADA 40 mg (ADA, *n* = 151; PBO, *n* = 162)	**SEC 150 mg (SEC, ESS = 15; PBO, ESS = 20)**	**SEC 300 mg (SEC, ESS = 25; PBO, ESS = 20)**	**ADA 40 mg (*n* = 151)**	**SEC 150 mg (ESS = 15)**	**SEC 300 mg (ESS = 25)**	**ADA 40 mg (*n* = 151)**	**SEC 150 mg (ESS = 15)**	**SEC 300 mg (ESS = 25)**
HAQ-DI score	−0.30 (−0.41, −0.19)	−0.33 (−0.43, −0.23)	**−0.47 (−0.60, −0.34) *P* = 0.046**	−0.40 (−0.48, −0.32)	**−0.57 (−0.66, −0.48) *P* = 0.007**	**−0.64 (−0.75, −0.53) *P* < 0.001**	−0.40[a] (−0.48, −0.32)	**−0.54 (−0.63, −0.45) *P* = 0.023**	**−0.68 (−0.80, −0.56) *P* < 0.001**
PGA (0–10 cm)	−20.0 (−25.9, −14.1)	−19.8 (−25.6, −13.9)	−24.9 (−31.2, −18.7)	−21.1 (−25.8, −16.4)	**−28.8 (−33.6, −24.1) *P* = 0.023**	**−32.0 (−37.4, −26.7) *P* = 0.003**	−22.4 (−25.6, −19.2)	−24.6 (−30.5, −18.6)	**−32.5 (−37.3, −27.7) *P* < 0.001**
Patient's assessment of pain (VAS)	−24.6 (−30.3, −18.9)	−16.8 (−23.0, −10.6)	−17.4 (−23.6, −11.3)	−24.0 (−28.5, −19.5)	−28.8 (−34.0, −23.7)	−24.6 (−29.3, −19.9)	−24.0 (−27.1, −20.9)	−25.6 (−31.6, −19.6)	−26.5 (−31.3, −21.6)
FACIT-Fatigue score[a]	5.9 (3.7, 8.1)	7.6 (5.5, 9.7)	4.3 (1.8, 6.8)	7.1 (5.5, 8.7)	8.7 (7.3, 10.1)	5.0 (3.2, 6.8)	6.7 (5.6, 7.8)	7.7 (6.3, 9.1)	6.5 (4.7, 8.2)

ADA adalimumab, *FACIT* Functional Assessment of Chronic Illness Therapy, *HAQ-DI* health assessment questionnaire disability index, *LOCF* last observation carried forward, *PGA* patient global assessment, *SEC* secukinumab, *VAS* visual analog scale

Data are shown as mean change from baseline (95% confidence interval)

Statistical significance (shown in bold text) defined as $P < 0.05$ (two-sided)

All statistically significant observations were in favor of SEC

[a] Week 48 FACIT-Fatigue score comparisons were made between week 48 (ADEPT) and week 52 (FUTURE 2)