

Table SI. Inclusion and exclusion criteria

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*Inclusion criteria*

Chronic plaque psoriasis  
Prospective or retrospective  
Thirty participants or more  
Daily practice, database, registries, "real-world", "real-life", observational, cohort  
Patients aged  $\geq 18$  years  
English, Dutch or German language  
Article reports on one of the following effectiveness outcomes: PASI, PhGA on a scale of 0–5, 0–6 or 0–7 or BSA  
Reporting on the effectiveness of following treatments: adalimumab, etanercept, infliximab, ustekinumab, acitretin, fumarates, cyclosporine, or methotrexate  
Reporting data analysed with the as-treated approach (per protocol analysis)

*Exclusion criteria*

Case reports  
RCTs or clinical trials  
Safety studies  
*In vitro* studies and other laboratory studies  
Pharmacokinetic studies  
Cost-effectiveness studies  
Open-label studies with a stringent protocol not reflecting daily practice  
Studies not reporting the time point at which effectiveness was measured  
Studies not reporting the dosage of treatment  
Studies not reporting data separately per treatment  
Studies reporting solely on non-systemic treatments such as phototherapy and topical therapies  
Studies reporting solely on alefacept or efalizumab since these agents are no longer available for psoriasis treatment  
Articles reporting on a combination of plaque psoriasis with other subtypes of psoriasis when the effectiveness data solely on chronic plaque psoriasis could not be extracted from the article  
Studies describing only outcomes on psoriatic arthritis  
Studies on specific psoriasis patient populations (e.g. psoriasis patients with HIV or hepatitis)  
Studies in which conventional systemic agents were combined with other conventional systemic therapies  
In patient cohorts treated with biologics, combination with conventional systemic was not excluded but described when appropriate

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RCT: randomized controlled trial; PASI: Psoriasis Area and Severity Index; PhGA: Physician's Global Assessment; BSA: body surface area.

Table SII. Search strategy

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Search strategy for PubMed and EMBASE:

*Words that indicated daily practice and effectiveness:*

"registry"; "database"; "daily practice"; "clinical practice"; "real-world"; "real-life"; "treatment outcome"; "observational"; "prospective"; "retrospective"; "PASI"; "PGA"; "BSA"

*Combined with the treatments of interest:*

"drug therapy"; "drug effects"; "therapeutic use"; "dermatologic agents"; "biological agents"; "tumour necrosis factor-alpha antagonists"; "anti-TNF"; "TNF-alpha inhibitors"; "antibodies monoclonal"; "antibodies monoclonal humanized"; "monoclonal antibody CA2"; "TNFR-Fc fusion protein"; "methotrexate"; "cyclosporine"; "acitretin"; "fumaric acid esters"; "fumarates"; "etanercept"; "adalimumab"; "infliximab"; "ustekinumab"

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TNF: tumour necrosis factor; TNFR-Fc: tumour necrosis factor receptor (p75) Fc fusion protein; PASI: Psoriasis Area and Severity Index; PhGA: Physician's Global Assessment; BSA: body surface area.

Table SIII. Evidence table

First author (Ref), year	Design	Dosage	Outcome measures	Date of evaluation (licensed dose)	Results (mean)
<b>Adalimumab</b>					
Ryan (12), 2009 (n=39 <sup>a</sup> )	Retrospect	Adalimumab 80 mg (W 0) followed by 40 mg once W (from W1) SC or adalimumab 40 mg EOW (from W1) SC. According to the response the dose interval was increased or decreased.	PASI75 Monotherapy  PASI75 combination therapy	W 16 W 24 W 48 W 72 W 16 W24 W48 W72 W 12	PASI75: 38% PASI75: 62% PASI75: 69% PASI75: 71% PASI75: 56% PASI75: 50% PASI75: 80% PASI75: 67% PASI50: 70%
van Lümig (13), 2010 (n=30 <sup>a</sup> )	Prosp. <sup>b</sup>	Adalimumab 80 mg (W0) followed by 40 mg EOW (from W1–12) SC. From W12–48, according to the response the dose interval was maintained, increased or decreased. (Adalimumab 40 mg EOW or 40 mg every 10 days or 40 mg once W.	PASI50 PASI75 PASI90	Comparing with original PASI (licensed dose) W 24 Comparing with original PASI W 48 Comparing with original PASI W 12 Comparing with course PASI (licensed dose) W 24 Comparing with course PASI W 48 Comparing with course PASI W 12 Comparing with course PASI (licensed dose) W 24 Comparing with course PASI W 48 Comparing with course PASI	PASI75: 27% PASI90: 10% PASI50: 61% PASI75: 36% PASI90: 7% PASI50: 77% PASI75: 54% PASI90: 15% PASI50: 30% PASI75: 13% PASI90: 13% PASI50: 50% PASI75: 7% PASI90: 0% PASI50: 54% PASI75: 23% PASI90: 15% W 16 (licensed dose) PASI50: 84% PASI75: 64% PASI90: 36% PASI50: 77% PASI75: 65% PASI90: 42% PASI50: 56% PASI75: 48% PASI90: 41% PASI50: 90% PASI75: 68% PASI90: 42% PASI50: 95% PASI75: 82% PASI90: 56% PASI75: 89% PASI90: 75% PASI50: 100% PASI75: 88% PASI90: 75% PASI75: 64% PASI90: 49% PASI75: 67% PASI90: 60% PASI75: 76% PASI90: 70% PASI75: 83% PASI90: 71% PASI50: 65% Comparing with original PASI75: 35% PASI PASI90: 11% PASI100: 0% PASI50: 69% Comparing with original PASI75: 45% PASI PASI90: 17% PASI100: 6%
Warren (14), 2010 (n=46 <sup>a</sup> )	Retrospect	Adalimumab 80 mg (W 0) followed by 40 mg EOW (from W1) SC. According to the response the dose was increased to 40 mg weekly the first 4 months.	PASI50 PASI75 PASI90	W 16 (licensed dose) W 24  W 52	PASI50: 84% PASI75: 64% PASI90: 36% PASI50: 77% PASI75: 65% PASI90: 42% PASI50: 56% PASI75: 48% PASI90: 41%
Fotiadou (15), 2012 (n=52 <sup>a</sup> )	Retrospect	Adalimumab 80 mg (W 0) followed by 40 mg EOW (from W1) SC. According to the response the dose interval was increased or decreased	PASI50 PASI75 PASI90	W 16  W 24  W 52  W 72	PASI50: 90% PASI75: 68% PASI90: 42% PASI50: 95% PASI75: 82% PASI90: 56% PASI75: 89% PASI90: 75% PASI50: 100% PASI75: 88% PASI90: 75%
López-Ferrer (16), 2013 (n=119 <sup>a</sup> )	Retrospect	Adalimumab 80 mg (W 0) followed by 40 mg EOW (From W1) SC.	PASI75 PASI90	W 16 W 24 W 52 W 104	PASI75: 64% PASI90: 49% PASI75: 67% PASI90: 60% PASI75: 76% PASI90: 70% PASI75: 83% PASI90: 71%
van Lümig (17), 2013 (n=85 <sup>a</sup> )	Prosp.	Adalimumab 80 mg (W 0) followed by 40 mg EOW (from W1) SC. According to the response the dose interval was decreased.	PASI50 PASI75 PASI90 PASI100	W 12 Comparing with original PASI W 24 Comparing with original PASI	PASI50: 65% PASI75: 35% PASI90: 11% PASI100: 0% PASI50: 69% PASI75: 45% PASI90: 17% PASI100: 6%

			W 48	PASI50: 83%	
			Comparing with original PASI	PASI75: 57%	
				PASI90: 21%	
				PASI100: 4%	
			W 96	PASI50: 94%	
			Comparing with original PASI	PASI75: 44%	
				PASI90: 22%	
				PASI100: 0%	
			W 132	PASI50: 83%	
			Comparing with original PASI	PASI75: 50%	
				PASI90: 0%	
				PASI100: 0%	
			W 12	PASI50: 46%	
			Comparing with course PASI	PASI75: 27%	
				PASI90: 8%	
				PASI100: 0%	
			W 24	PASI50: 56%	
			Comparing with course PASI	PASI75: 31%	
				PASI90: 11%	
				PASI100: 6%	
			W 48	PASI50: 72%	
			Comparing with course PASI	PASI75: 38%	
				PASI90: 15%	
				PASI100: 4%	
			W 96	PASI50: 72%	
			Comparing with course PASI	PASI75: 44%	
				PASI90: 22%	
				PASI100: 0%	
			W 132	PASI50: 50%	
			Comparing with course PASI	PASI75: 50%	
				PASI90: 0%	
				PASI100: 0%	
Menting (18), 2014	Prosp.	Adalimumab 80 mg (W 0) followed by 40 mg EOW (from W1) SC or 40 mg every 10 days or 40 mg once W.	PASI75	W 12	PASI75: 54%
(n=90 TE <sup>a</sup> )			PASI90	W 52	PASI90: 42.9%
			Non-naive	W 12	PASI75: 26%
				W 52	PASI90: 18%
					PASI90: 8%
<b>Etanercept</b>					
de Groot (19), 2006	Retros.	Etanercept 50 mg BIW SC (W0–12).	PASI50	W 12	PASI50: 71%
(n=50 <sup>a</sup> )			PASI75	(licensed dose)	PASI75: 22.6%
			PASI90		PASI90: 6.5%
			MPD		MPD: 57.5%
			MBSAD		MBSAD: 62.3%
		Etanercept 25 mg BIW SC (W0–12).	PASI50	W 12	PASI50: 85.7%
			PASI75		PASI75: 21.4%
			PASI90		PASI90: 7.1%
			MPD		MPD: 60%
			MBSAD		MBSAD: 54.1%
Berends (20), 2007	Prosp.	Etanercept 50 mg BIW SC (W0–12) followed by 25 mg BIW (W12–24).	PASI50	W 12 (licensed dose)	PASI50: 82%
(n=45 <sup>a</sup> )			PASI75	W 18 (licensed dose)	PASI75: 39%
				W 24 (licensed dose)	PASI50: 88%
					PASI75: 47%
					PASI50: 71%
					PASI75: 50%
		25 mg BIW SC (W0–24).	PASI50	W 12	PASI50: 71%
			PASI75		PASI75: 24%
				W 18	PASI50: 79%
					PASI75: 64%
				W 24	PASI50: 79%
					PASI75: 57%
Barrera (21), 2008	Retros.	Etanercept 50 mg BIW SC (W0 – 12) followed by 25 mg BIW (W12–24) or 25 mg BIW (W0–24). Thereafter one of these treatments by losing 50% of the PASI. Three cycles of 24W.	PASI50	Cycle 1	PASI50: 65.5%
(n=66)			PASI75	W 12 (licensed dose)	PASI75: 36.1%
			MPD		PASI90: 21.3%
				Cycle 1	PASI50: 91.3%
				W 24	PASI75: 76.1%
					PASI90: 41.3%
					MPD: 78.1%

				Cycle 2	PASI50: 72.4%
				W 12	PASI75: 31%
					PASI90: 10.3%
				Cycle 2	PASI50: 94.7%
				W 24	PASI75: 63.2%
					PASI90: 31.6%
					MPD: 66.9%
				Cycle 3	PASI50: 60%
				W 12	PASI75: 33.3%
					PASI90: 20%
				Cycle 3	PASI50: 85.7%
				W 24	PASI75: 42.9%
					PASI90: 28.6%
					MPD: 76%
Driessen (22), 2008 (n=80 <sup>a</sup> )	Prosp.	Etanercept 50 mg BIW SC (W0–12) followed by 25 mg BIW (W12–24). According to the response the dose of 25 mg BIW was temporary increased.	PASI50 PASI75 PASI90 MPD	W 12 (licensed dose)	PASI50: 66%
		Etanercept 25 mg BIW SC (W0–24). According to the response the dose was temporary increased.	PASI50 PASI75 PASI90 MPD	W 24 (licensed dose) W 12	PASI75: 20%
					PASI90: 8%
					MPD: 59%
					PASI50: 68%
					PASI75: 21%
					PASI90: 5%
				W 24	MPD: 60%
Gisoni (40), 2008 (n=58)	Retrospect.	Etanercept 25 mg BIW SC.	MPD	W 24	MPD: 74.5%
Antoniou (23), 2009 (n=77 <sup>a</sup> )	Retrospect.	Etanercept 50 mg BIW SC (W0–12) followed by 25 mg BIW (W12–48). According to the response the dose was increased to 50 mg BIW.	PASI50 PASI75	W 24 W 48	PASI50: 79%
					PASI75: 53%
					PASI50: 81%
					PASI75: 49%
Driessen (24), 2009 (n=90 <sup>a</sup> )	Prosp.	Etanercept 50 mg BIW SC (W0–12) followed by 25 mg BIW (W12–24) or Etanercept 25 mg BIW SC (W0–W24). According to the response the dose was temporary increased to 50 mg BIW.	PASI50 PASI75 PASI90 MPD	W 24	PASI50: 69%
					PASI75: 39%
					PASI90: 18%
					MPD: 59.7%
Jiménez-Puya (25), 2009 (n=58)	Retrospect.	Etanercept 50 mg BIW SC or 25 mg BIW SC.	PASI50 PASI75 PASI90 MBSAD	W 8 W 16	PASI50: 77.6%
					PASI75: 41.4%
					PASI90: 6.9%
				W 16	PASI50: 86.8%
					PASI75: 66%
					PASI90: 37.7%
				W 24	PASI50: 97.5%
					PASI75: 85%
					PASI90: 57.5%
				W 32	PASI50: 100%
					PASI75: 80.8%
					PASI90: 57.7%
				W 40	PASI50: 94.7%
					PASI75: 84.2%
					PASI90: 52.6%
				48W	PASI50: 100%
					PASI75: 92.3%
					PASI90: 69.2%
					MBSAD: 85%
Mazzotta (26), 2009 (n=234)	Prosp. <sup>c</sup>	Etanercept 50 mg BIW SC (W0–12) followed by 25 mg BIW (W12–24)	PASI50 PASI75 MPD (psoriasis)	W 12 (licensed dose)	PASI50: 77.9%
				W 24 (licensed dose)	PASI75: 41%
					MPD: 67.7%
					PASI50: 85.7%
					PASI75: 73.2%
					MPD: 81%
				W 12 (licensed dose)	PASI50: 64 %
					PASI75: 43%
					MPD: 66.7%
				W 24 (licensed dose)	PASI50: 79.8%
					PASI75: 61.8%
					MPD: 80.5%
Warren (27), 2009 (n=70 <sup>a</sup> )	Retrospect.	Etanercept 25 mg BIW SC.  According to the response the dose was increased to 50 mg BIW.	PASI50 PASI75 PASI90 MPD	W 12	PASI50: 67%
					PASI75: 35%
					PASI90: 7%
					MPD: 55%

				W 24	PASI50: 67% PASI75: 41% PASI90: 6% MPD: 59% PASI75: 57%
Antoniou (28), 2010 (n=35 <sup>a</sup> )	Retrosp. <sup>d</sup>	Etanercept 50 mg BIW SC (W0–12) followed by 25 mg BIW (W12–24).	PASI75	W 24 (licensed dose)	
van Lümig (13), 2010 (n=30 <sup>a</sup> )	Prosp.	Etanercept 50 mg BIW SC or 25 mg BIW SC (W0 – 12). Thereafter dosage according to physician.	PASI50 PASI75 PASI90	W 12  W 24  W 48	PASI50: 60% PASI75: 13% PASI90: 3.3% PASI50: 58% PASI75: 19% PASI90: 3.3% PASI50: 79% PASI75: 25%
Zaragoza (29), 2010 (n=43)	Retrosop. <sup>c</sup>	Etanercept 50 mg BIW SC (W0–12) or 25 mg BIW SC (W0–12) followed by 25 mg BIW SC (W12–24).  According to the response the dose was increased or decreased.	PASI50 PASI75 MPD	W 24  W 48  W 72 W 96 W 120 W 144	PASI50: 81.4% PASI75: 60.5% MPD: 73.8% PASI50: 90.5% PASI75: 71.4% MPD: 79.6% MPD: 81.3% MPD: 38.2% MPD: 87.6% MPD: 88.4%
Antoniou (30), 2011 (n=118 <sup>a</sup> )	Retrosop.	Etanercept 50 mg BIW SC (W0–12) followed by 50 mg once W (from W 12).	PASI50 PASI75	W 12 (licensed dose) W 24 (licensed dose) W 48 (licensed dose) W 72 (licensed dose) W 12 (licensed dose)	PASI50: 59% PASI75: 25% PASI50: 81% PASI75: 47% PASI50: 82% PASI75: 54% PASI50: 87% PASI75: 52% PASI50: 82% PASI75: 54.1%
Esposito (31), 2012 (n=61)	Retrosop. <sup>c</sup>	Psoriasis patients with psoriatic arthritis: Etanercept 50 mg BIW SC. Patients with only psoriasis: Etanercept 50 mg BIW, followed by 25 mg BIW SC.	PASI50 PASI75 MPD	W 24  W 52  W 104  W 156	MPD: 73.3% PASI50: 90.2% PASI75: 78.7% MPD: 85.9% PASI50: 90.2% PASI75: 83.6% MPD: 87.9% PASI50: 91.8% PASI75: 86.9% MPD: 88.4% PASI50: 91.8% PASI75: 83.6% MPD: 86.9%
van Lümig (32), 2012 (n=152 <sup>a</sup> ) (n=158 TE)	Prosp.	Etanercept 50 mg BIW SC or 25 mg BIW SC (W0–12). Thereafter dosage according to the physician.	PASI50 PASI75 PASI90	W 12  W 24  W 48 W 108 W 156 W 204 W 264	PASI50: 65.6% PASI75: 23.6% PASI90: 5.1% PASI50: 69.7% PASI75: 38.1% PASI90: 14.9% PASI75: 36.6% PASI75: 40.8% PASI75: 50% PASI75: 59.4% PASI75: 60%
Puig (33), 2012 (n=444 <sup>a</sup> )	Prosp.	Etanercept 50 mg BIW SC (W0 –12) or 50 mg once W or 25 mg BIW (W0–12). After 12 W patients reaching a PASI50 could continue treatment. After 6 months the decision was made to treat patients continuously or intermittently.	PASI50 PASI75 PASI90 MPD MBSAD MPhGAD	W 12 Overall  W 12 Continuous regimen W 12 Intermittent regimen	PASI50: 88.4% PASI75: 63.9% PASI90: 37.8% MPD: 69.6% MBSAD: 66.4% MPhGAD: 62.5% PASI75: 63% PASI90: 34.8% PASI75: 64% PASI90: 38.4%



			PASI75	W 12	PASI75: 38%
			PASI90		PASI90: 12%
			Non-naive	W 52	PASI90: 14%
<b>Ustekinumab</b>					
Clemmensen (37), 2011 (n=71)	Prosp.	Ustekinumab 45 or 90 mg (W 0, 4, and every 12 W). <sup>e</sup>	PASI75	W 16 (licensed dose)	PASI75: 80%
Laws (38), 2012 (n=129 <sup>a</sup> )	Retrosop.	Ustekinumab 45 or 90 mg (W 0, 4 and every 12 W). <sup>e</sup>	PASI50 PASI75 PASI90	W 16 (licensed dose) W 24 (licensed dose) W 48 (licensed dose)	PASI50: 82.7% PASI75: 63% PASI90: 29.1% PASI75: 66.7% PASI75: 65.5%
Ruiz Salas (39), 2012 (n=36 <sup>a</sup> )	Retrosop.	Ustekinumab 45 mg (W 0, 4 and every 8–12 W). <sup>e</sup>	PASI50 PASI75 PASI90 MPD	W 12 W 24 W 36	PASI50: 89.6% PASI75: 79.3% PASI90: 65.5% PR: 80.7% PASI50: 89.6% PASI75: 79.3% PASI90: 75.9% MPD: 80.9% PASI50: 89.6% PASI75: 89.6% PASI90: 75.9% MPD: 89.3%
		Ustekinumab 90 mg (W 0, 4 and every 8–12 W).	PASI50 PASI75 PASI90 MPD	W 12 W 24 W 36	PASI50: 85.7% PASI75: 57.1% PASI90: 28.5% MPD: 75.6% PASI50: 57.1% PASI75: 28.5% PASI90: 14.2% MPD: 48.2% PASI50: 85.7% PASI75: 71.4% PASI90: 54.1% MPD: 80%
		Ustekinumab both groups [45 and 90 mg] (W 0, 4 and every 8–12 W).	PASI50 PASI75 PASI90 MPD	W 12 W 24 W 36	PASI50: 91.7% PASI75: 75% PASI90: 58.3% MPD: 79.5% PASI50: 83.3% PASI75: 69.4% PASI90: 63.9% MPD: 71.9% PASI50: 88.8% PASI75: 71.4% PASI90: 57.1% MPD: 86.8%
Gisoni (36), 2013 (n=79)	Prosp.	Ustekinumab 45 or 90 mg (W 0, 4 and every 12 W). Dosing is weight dependent. Individuals weight (≤100 kg= ustekinumab 45mg; >100kg= 90 mg).	PASI50 PASI75 MPD	W 4 (licensed dose) W 28 (licensed dose)	PASI75: 28% MPD: 82% PASI50: 82% PASI75: 58% MPD: 60%
<b>Acitretin</b>					
Piaserico (42), 2014 (n=62)	Retrosop.	Acitretin mean 0.38 mg/kg/day.	PASI75	W 12	PASI75: 27%
<b>Fumarates</b>					
Carboni (43), 2004 (n=40)	Prosp.	Fumarates 30–360 mg/day. By remission doses were gradually reduced.	MPD	W 4 W 12 W 24	MPD: 39.6% MPD: 63% MPD: 80%
Inzinger (44), 2013 (n=272)	Retrosop.	Fumarates 30–720 mg/day.	PASI50 PASI75 PASI90 PASI100	W 12 W 24	PASI50: 76% PASI75: 47% PASI90: 9% PASI100: 1% PASI50: 82% PASI75: 63% PASI90: 27% PASI100: 5%



				W 48	PASI50: 90% PASI75: 76% PASI90: 34% PASI100: 12%
<b>Cyclosporine</b>					
Piaserico (42), 2014 (n=36)	Retrospective	Cyclosporine mean 3.5 mg/kg/day.	PASI75	W 12	PASI75: 46%
<b>Methotrexate</b>					
Gisoni (40), 2008 (n=43)	Retrospective	Methotrexate 15 mg/week IM.	MPD	W 24	MPD: 47.6%
Inzinger (44), 2013 (n=72)	Retrospective	Methotrexate 10 mg/week SC increased to 20 mg/week SC.	PASI50 PASI75 PASI90 PASI100	W12   W 24   W 48	PASI50: 67% PASI75: 40% PASI90: 12% PASI100: 10% PASI50: 76% PASI75: 62% PASI90: 28% PASI100: 10% PASI50: 87.5% PASI75: 81% PASI90: 44% PASI100: 19%
Piaserico (42), 2014 (n=74)	Retrospective	Methotrexate mean 11.7 mg/week.	PASI75	W 12	PASI75: 49%

<sup>a</sup>Additional conventional systemic therapies. <sup>b</sup>Patient switched from etanercept. <sup>c</sup>Patients with psoriasis with or without psoriatic arthritis. <sup>d</sup>Patients switching from efalizumab. <sup>e</sup>Dosing is weight dependent. Individuals weight ( $\leq 100$  kg= ustekinumab 45 mg;  $>100$  kg= 90 mg).

Retrospective: retrospective; Prospective: prospective; BIW: biweekly; BSA: body surface area; MBSAD: mean BSA decrease; EOW: every other week; IM: intramuscular; IV: intravenous; PASI: Psoriasis Area and Severity Index; MPD: mean PASI decrease; PhGA: Physician Global Assessment; MPhGAD: mean PhGA decrease; SC: subcutaneous; TE: treatment episode.