

## Supplemental Online Content

Hopkins ZH, Thiboutot D, Homsy HA, Perez-Chada LM, Barbieri JS. Patient-reported outcome measures for health-related quality of life in patients with acne vulgaris: a systematic review of measure development and measurement properties. *JAMA Dermatol*. Published online June 22, 2022. doi:10.1001/jamadermatol.2022.2260

**eTable 1.** Results of quality assessment per study

**eTable 2.** Diagnostic performance of serological tests – test combinations

**eAppendix 1.** Search strategy for Medline (using PubMed)

**eAppendix 2.** Search strategy for EMBASE (using Embase.com)

**eReferences.**

This supplemental material has been provided by the authors to give readers additional information about their work.

**eTable 1. Characteristics of the Included Study Populations**

PROM	Ref	Population			Disease characteristics			Instrumental Administration			Response rate
		N	Age mean (SD, range), yr	Gender (% females)	Disease	Disease Duration Mean (SD) yr	Disease Severity	Setting	Country	Language	
Acne-Specific											
<b>Acne Disability Index (ADI)</b>	Motley 1989	100	22.8 (7.7, 12-55)	46%	Acne	Not reported	Not reported	Outpatient Clinic	UK	English	Not reported
	Salek 1996	100	Median 22 (15-51)	40%	Acne	Not reported	Not reported	Outpatient Clinic	UK	English	Not reported
<b>Cardiff Acne Disability Index (CADI)</b>	Motley 1992	66	21.5 (13-53)	39%	Acne	Median 6 (1-39)	Median IGA 1.5, 0.1, and 0.5 for the face, chest, and back.	Outpatient Clinic	UK	English	Not reported
	Salek 1996	100	Median 22 (15-51)	40%	Acne	Not reported	Not reported	Outpatient Clinic	UK	English	Not reported
	Oakley 1996	104	Median 18 (10-44)	52%	Acne	Not reported	Median IGA 2, 0, and 1 for the face, chest, and back.	Outpatient Clinic	New Zealand	English	100%
	Dreno 2004	30	24 (13-53)	64%	Acne	Not reported	Not reported	Outpatient Clinic	France	French	Not reported
	Walker 2006	147	(15-18)	46%	Acne	Not reported	Not reported	Cross-sectional survey	Scotland	English	89%
	Aghaei 2006	100	21 (3)	85%	Acne	Not reported	16% mild, 78% moderate,	Dermatology clinic	Iran	Persian	Not reported

							and 6% severe				
	Law 2009	85	16 (2)	71%	Acne	Not reported	52% mild, 38% moderate, 11% severe	Two secondary schools	China	Chinese	89%
	Zaraa 2013	82	21.2 (4.1)	73%	Acne	Not reported	61% mild to moderate	Dermatology clinic	Tunesia	French	Not reported
	Jankovic 2013	353	(15-18)	36%	Acne	Not reported	Not reported	Secondary school students	Serbian	Serbian	Not reported
	Perić 2013	228	16.5 (0.5)	82%	Acne	49% >1 year	Not reported	Two medical high schools	Serbian	Serbia	Not reported
	Gupta 2015	100	22.5 (5.4, 14-45)	37%	Acne	Not reported	44% mild, 42% moderate, 14% severe	Outpatient dermatology clinic	Hindi	India	Not reported
	Grando 2016	100	15.4 (2.1)	44%	Acne	2.5 (0.2)	58% mild, 36% moderate, 6% severe	Outpatient dermatology clinic	Portuguese	Brazil	Not reported
	Kim 2017a	254	Male: 16 (3) Female: 17 (4)	55%	Acne	Not reported	Not reported	Adolescents	Korea	Korean	Not reported
	Kim 2017b	107	Male: 26 (4) Female: 27 (5)	22%	Acne	Not reported	Not reported	College students	Korea	Korean	Not reported
	Alsulaimani 2020	45	90.1% were 18-24	82%	Acne	Not reported	Not reported	Outpatient dermatology clinic	Saudi Arabia	Arabic	Not reported
<b>Acne-QoL</b>	Martin 2001	111	19.0 (5.4)	56%	Acne	5.5 (4.6)	21% mild, 63% moderate, 16% severe	Outpatient dermatology clinic	United States	English	Not reported

	Fehnel 2002	450	24.1 (7.5)	100%	Acne	Not reported	73 lesions (mean)	Two trials of combined oral contraceptives	United States	English	Not reported
	Kamamoto 2012	80	20.5 (4.8)	53%	Acne	6.6 (4.4)	34% mild, 36% moderate, 30% severe	Dermatology clinic	Brazil	Brazilian Portuguese	Not reported
	Tan 2011	34	23 (14-53)	70%	Acne	Not reported	Not reported	Dermatology clinic	Canada, France	French	Not reported
	Muvdi 2020	349	19.6 (4.6)	42%	Acne	Not reported	13% mild, 43% moderate, 44% severe	Dermatology clinic	Columbia	Spanish	99.7%
	Tan 2006	596	21.9 (7.7); 22.8 (8.0)	58.0%	Acne	26% <2 years, 57% 2-10 years, 17% >10 years	7% clear, 39% mild, 41% moderate, 13% severe	Survey	Canada	English	Not reported
	Saitta 2012	1192	19.3	52.4%	Acne	Not reported	80.7% moderate, 19.3% severe	Clinical trial	United States	English	Not reported
	Tan 2013	22	Not reported	Not reported	Acne	Not reported	Not reported	Outpatient dermatology clinic	Canada, France	French	Not reported
<b>AcneQOLI</b>	Rapp 2006	479	23.3 (8.2)	64%	Acne	8.8 (7.4)	Not reported	Outpatient dermatology clinic	United States	English	Not reported
<b>CompAQ</b>	McClellan 2018	234	20.3 (3.0)	85%	Acne (85% face, 45% truncal)	Not reported	Not reported	Outpatient dermatology clinic	Canada, United States, United Kingdom	English	Not reported

<b>Acne Severity and Impact Scale (ASIS)</b>	Hudgens et al, 2015	150	24.5 (10.2)	59%	Acne	Not reported	29% mild, 59% moderate, 12% severe	Outpatient	United States	English	>97%
<b>Acne Quality of Life Scale (AQOL)</b>	Gupta 1998	70	23.7 (6.8)	80%	Acne	Not reported	Mean patient rated severity 4.7/10	Outpatient dermatology clinic	United States	English	70%
	Ilgen 2005	108	20.4 (1.9)	62%	Acne	1-156 months	Global score (0-44): mean score 24.5 (8.1)	Dermatology clinic	Turkey	Not reported	Not reported
<b>Acne-Q</b>	Klassen 2019	256	23.1 (8.4)  12-19: 41% 20-29: 38% 30-52: 20%	71%	Acne	Not reported	29% acne, 2% acne scars, 69% acne and scars. 64% face, 29% chest, 20% back	Dermatology clinic	United States, Canada	English	Acne scars 8.9% Facial acne 2.5% Chest acne 13.2% Back acne 12.2% Facial skin 5.0% Symptoms 6.9% Appearance-related distress 2.6%
<b>Assessment of the Psychological and Social Effects of Acne (APSEA)</b>	Zauli 2012	100	17.5 (11-25)	50%	Acne	4.1 (0.5-13.0)	Mean Leeds grade 0.89 (0.2-3.8)	Dermatology Clinic	Italy	Not reported	Not reported

<b>Acne Impact on Adult Daily Life (AI-ADL)</b>	Dreno 2021	207	22.1 (7.6)	68%	Acne	7.3 (6.3)	38% mild, 42% moderate, 20% severe	124 French Dermatology Clinics	France	French	Not reported
Dermatology-Specific											
<b>Dermatology Life Quality Index (DLQI)</b>	Alsulaiman i 2020	45	90.1% were 18-24	82%	Acne	Not reported	Not reported	Outpatient dermatology clinic	Saudi Arabia	Arabic	Not reported
	Newton 1997	79	(16-39)	39%	Acne	Not reported	Not reported	Dermatology department	UK	English	68% at 4 months, 67% at 12 months
	Klassen 2000	130	22.1 (5.2)	39%	Acne	Not reported	71% treated with isotretinoin	Outpatient dermatology clinic	UK	English	85%
	Takahasi 2006	197	24.8 (7.4)	77%	Acne	Not reported	Not reported	Outpatient dermatology clinic	Japan	Japanese	Not reported
	Richter 2017	41	27.6 (5.3)	100%	Acne	Not reported	Mean ISGA 2.3 (0.55)	Clinical trial of azelaic acid	Germany	German	Not reported
<b>Children's Dermatology Life Quality Index (CDLQI)</b>	Janković et al 2013	353	15-18 years old	36%	Self-reported acne	Not reported	Not reported	School	Slovenia	Serbian	Not reported
	Reljić et al 2014	199	16.5 (0.6)	84%	Self-reported acne	51.4% <1 year	74% CDLQI <5, 19% 5-9, 7% >9	School	Serbia	Serbian	87.3%
	Tasoula et al 2012	491	15 (11-19)	51%	Acne	Not reported	71% mild, 29% moderate to severe	School	Greece	Not reported	Not reported

<b>DSQL</b>	Anderson 1997	392	20.1 (13.8-31.5)	53%	Acne	Not reported	Not reported	Outpatient dermatology clinic	United States	English	Not reported
	Anderson 1998	292	20.7 (3.8, 16-30)	60%	Acne	6.6 (3.6)	Mean total lesion count 85.5	6 outpatient dermatology clinics	United States	English	93.3
<b>Oily Skin Self Assessment Scale (OSSAS) and the Oily Skin Impact Scale (OSIS)</b>	Arbuckle 2009	196	36.7 (12.1, 18-70)	72%	Oily skin, 64% acne	Not reported	48% mild, 41% moderate, 11% severe acne	Outpatient clinics	United States	English	Not reported
<b>Skindex-29</b>	Jones-Caballero et al, 2007	1892 (baseline) and 1613 (final)	20.1	64%	Mild to moderate acne	Not reported	Not reported	Outpatient clinics	Spain	Spanish	95.5%
Generic											
<b>UKSIP</b>	Salek 1996	100	Median 22 (15-51)	40%	Acne	Not reported	Not reported	Outpatient Clinic	UK	English	Not reported
<b>EQ-5D</b>	Klassen 2000	130	22.1 (5.2)	39%	Acne	Not reported	71% treated with isotretinoin	Outpatient dermatology clinic	UK	English	85%
<b>SF-36</b>	Klassen 2000	130	22.1 (5.2)	39%	Acne	Not reported	71% treated with isotretinoin	Outpatient dermatology clinic	UK	English	85%
<b>Patient Benefit Index (PBI)</b>	Augustin 2009	906	Not reported	Not reported	Acne	Not reported	Not reported	Longitudinal clinical study	Germany	German	Not reported
<b>PROMIS-Anxiety</b>	Esaa 2020	527	27 (10-72)	70%	Acne	Not reported	Not reported	Outpatient dermatology clinic	United States	English	Not reported

**eTable 2. Results of Studies on Measurement Properties**

**ACNE SPECIFIC**

***Acne Disability Index (ADI)***

ADI	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Salek 1996	United Kingdom (English)				70	d	Cronbach's alpha = 0.80			

ADI	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Salek 1996	United Kingdom (English)	70	d	Pearson correlation = 0.96						

ADI	Country (language) in which the questionnaire was evaluated	Hypothesis Testing					Responsiveness		
		n	Meth Qual	Result (rating)			n	Meth Qual	Result (rating)
Salek 1996	United Kingdom (English)	100	v	Spearman correlation with acne clinical severity= 0.10; p>0.05					
Salek 1996	United Kingdom (English)	100	v	Pearson correlation with CADI = 0.48, p<0.01					
Motley 1989	United Kingdom (English)	100	i	Correlation between acne severity and index total score for the face (r=0.246), chest (r=0.347), and back (r=0.436). p<0.01 for all.					
Motley 1989	United Kingdom (English)	100	i	Correlation between amount of money patient is willing to pay to cure acne and acne index score					



				r=0.229 p<0.05			
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***Acne Impact on Adult Daily Life (AI-ADL)***

AI-ADL	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Dreno 2021	French	207	v	One factor (Unidimensional): Eigen value ~8.3, TFI 0.998, CLI 0.998 and RMSEA 0.054	207	v	Cronbach's a=0.949			

AI-ADL	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Dreno 2021		47	d	ICC= 0.992 [0.981;0.997]						

AI-ADL	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
AI-ADL		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Dreno 2021		207	a	<p><i>9a. comparison with another instrument: Convergent validity:</i>  Spearman R  SF-12 physical score 0.084 (-0.053;0.218)  p=0.228  SF-12 mental score  -0.558 [-0.645;-0.457] p&lt;0.001  CADI score 0.757 [0.692; 0.81] p&lt;0.001</p> <p><i>9b. Known groups comparison: Acne severity</i>  Kruskal–Wallis test confirmed the statistically significant (P &lt; 0.001) difference of AI-ADL scores among the different acne severity according to the GEA. The more severe acne, the higher was the AI-ADL score (mean AI-ADL scores for: mild acne 19.06 +/- 13.36, moderate acne: 27.25 +/-16.09 and severe acne: 35.36+/-16.67)</p>			

### *Acne Severity and Impact Scale (ASIS)*

ASIS	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Hudgens 2015 (Sign)	United States (English)	150	a	<p><b>Unidimensionality:</b> Sign domain performed below the recommender minimum criterial</p> <p><b>Local independence:</b> All items fulfilled criteria independence (item residual correlation &lt;0.4)</p> <p><b>Item fit:</b> Infit and outfit mean squares <math>\geq 0.5</math> and <math>\leq 1.5</math></p>	150	v	<p>Cronbach's alpha = 0.79</p> <p>IRT (subject/person) Reliability = 0.72</p> <p>Separation = 1.61</p> <p>IRT (Item) Reliability = 0.93</p> <p>Sepearation = 3.60</p>	Caucasians = 89 Non-Caucasians = 61	i	None of the items demonstrated significant variable between Caucasians and non-Caucasians
Hudgens 2015 (Impact)	United States (English)	150	a	<p><b>Unidimensionality:</b> Item residuals in the impact domain had acceptable explained variance (&gt;60%) and unexplained in 1<sup>st</sup> contrast (5.5%)</p> <p><b>Local independence:</b> All items fulfilled criteria independence (item residual correlation &lt;0.4)</p> <p><b>Item fit:</b></p>	150	v	<p>Cronbach's alpha = 0.77</p> <p>IRT (subject/person) Reliability = 0.93</p> <p>Separation = 3.69</p> <p>IRT (Item) Reliability = 0.99</p> <p>Sepearation = 11.74</p>	Caucasians = 89 Non-Caucasians = 61	i	None of the items demonstrated significant variable between Caucasians and non-Caucasians

				Infit and outfit mean squares $\geq 0.5$ and $\leq 1.5$ , except for items 10 and 11						
Hudgens 2015 (Impact - Emotional)	United States (English)	150	i	Results not given	150	v	Cronbach's alpha = 0.92	Caucasians = 89 Non-Caucasians = 61	i	No data given
Hudgens 2015 (Impact - Social)	United States (English)	150	i	Results not given	150	v	Cronbach's alpha = 0.92	Caucasians = 89 Non-Caucasians = 61	i	

PROM	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Hudgens 2015 (Sign)	United States (English)	150	a	ICC = 0.78						
Hudgens 2015 (Impact)	United States (English)	150	a	ICC = 0.77						
Hudgens 2015 (Impact - Emotional)	United States (English)	150	a	ICC = 0.76						
Hudgens 2015 (Impact - Social)	United States (English)	150	a	ICC = 0.58						

PROM	Country (language) in which the questionnaire was evaluated	Hypothesis Testing				Responsiveness		
		n	Meth Qual	Result (rating)		n	Meth Qual	Result (rating)

Hudgens 2015 (Sign)	United States (English)	150	a	Acne-QoL: self-perception (r=-0.50), role-social (r=-0.42), role emotional (r=-0.51), acne symptoms (4=-0.68)			
Hudgens 2015 (Impact)	United States (English)	150	a	Acne-QoL: self-perception (r=-0.81), role-social (r=-0.67), role emotional (r=-0.78), acne symptoms (4=-0.63)			
Hudgens 2015 (Sign)	United States (English)	150	a	DSQL: Work/school performance (r=0.30), self perception (r=0.49)			
Hudgens 2015 (Impact)	United States (English)	150	a	DSQL: Work/school performance (r=-0.59), self perception (r=-0.82)			
Hudgens 2015 (Sign)	United States (English)	150	a	Skindex-29: functioning (r=0.48)			
Hudgens 2015 (Impact)	United States (English)	150	a	Skindex-29: functioning (r=0.76)			
Hudgens 2015 (Sign)	United States (English)	150	a	Significant differences in mean sign ASIS scores by DSQL severity score (p<0.001) very mild = 1.2 (0.42), moderate = 1.7 (0.61), very severe = 2.2 (0.50)			
Hudgens 2015 (Impact)	United States (English)	150	a	DSQL severity score (p<0.001) very mild = 1.1 (0.55), moderate = 1.7 (0.80), very severe = 2.2 (0.66)			

**Acne-Q**

Acne-Q	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Klassen 2019	United States and Canada (English)	256	a	<p><u>Monotonicity:</u> All items had ordered response thresholds</p> <p><u>Model fit:</u> The data fit the Rasch model with nonsignificant chi2-values for the five appearance scales, with some misfit for the symptoms and appearance-related distress.</p> <p>Item fit was within -2.5 to +2.5 for 63 of 73 items and all items had non-significant chi2.</p> <p>Unidimensionality and local independence not specifically described</p>	Per scale in order: 194 276 112 144 288 273 295	v	<p>Cronbach's <math>\alpha</math></p> <p>Acne scars 0.96</p> <p>Facial acne 0.96</p> <p>Chest acne 0.95</p> <p>Back acne 0.97</p> <p>Facial skin 0.96</p> <p>Symptoms 0.87</p> <p>Appearance-related distress 0.94</p>			

Acne-Q	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Klassen 2019	United States and Canada (English)	Per scale in order: 25 34 13 17 36 32 36	d	ICC Acne scars 0.87 Facial acne 0.94 Chest acne 0.56 Back acne 0.95 Facial skin 0.81 Symptoms 0.88 Appearance-related distress 0.93  Person separation index with, without extremes: Acne scars 0.94, 0.93 Facial acne 0.94, 0.94 Chest acne 0.92, 0.91 Back acne 0.95, 0.94 Facial skin 0.93, 0.92 Symptoms 0.77, 0.75 Appearance-related distress 0.88, 0.94						

Acne-Q	Country (language) in which the questionnaire was evaluated	Hypothesis Testing	Responsiveness



		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Klassen 2019	United States and Canada (English)	112-288 depending on comparison	d	Correlation r Intercorrelation between scales: <i>Acne scars scale:</i> Facial acne 0.77 p=0.01 Back acne 0.45 p=0.01 Chest acne 0.54 p=0.01 Facial skin 0.40 p=0.01 Symptoms 0.51 p=0.01 Appearance-related distress -0.61 p=0.01 <i>Facial acne scale:</i> Back acne 0.29 p=0.01 Chest acne 0.43 p=0.01 Facial skin 0.51 p=0.01 Symptoms 0.62 p=0.01 Appearance related distress -0.59 p=0.01 <i>Back acne scale:</i> Chest acne 0.58 p=0.02 Facial skin 0.19 p=.05 Symptoms 0.38 p=0.01			

			<p>Appearance-related distress -0.31 p=0.01</p> <p><i>Chest acne scale:</i> Symptoms 0.45 p=0.01</p> <p>Appearance-related distress -0.36 p=0.01</p> <p><i>Facial skin scale:</i> Symptoms 0.36 p=0.01</p> <p>Appearance related distress -0.45 p=0.01</p> <p><i>Symptoms scale:</i> Appearance related distress -0.50 p=0.01</p> <p>Correlation with clinical data and demographics:</p> <p><i>Acne scars scale:</i> Coverage facial acne scars -0.30 p=0.01</p> <p><i>Facial acne scale:</i> Coverage facial acne -0.24 p=0.01 Coverage facial acne scars -0.30 p=0.01</p> <p><i>Back acne scale:</i> Female Sex -0.20 p=0.05</p> <p><i>Chest acne scale:</i> None significant</p>			
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			<i>Facial skin scale:</i> Coverage facial acne -0.23 p=0.01 Coverage facial acne scars -0.23 p=0.01 <i>Symptom scale:</i> Coverage facial acne -0.17 p=0.01 Coverage facial acne scars -0.25 p=0.01 <i>Appearance-related  distress scale:</i> Coverage facial acne 0.16 p=0.01 Coverage facial acne scars 0.28 p=0.01 Female Sex 0.15 p=0.05			
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### *Acne Quality of Life Index (Acne-QOLI)*

Acne-QOLI	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Rapp 2006	United States (English)	479	d	“yielded single factor”	479	v	Cronbach’s alpha = 0.97 (>0.91 for each subscale)			

Acne-QOLI	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Rapp 2006	United States (English)	10	d	Pearson correlation r=0.86 Spearman rank-order r=0.71						

Acne-QOLI	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Rapp 2006	United States (English)	479	a	Correlation with: Skindex-16: r=-0.79 Perceived Stress Scale: r=-0.28 Profile of Mood States: r=-0.39			
Rapp 2006	United States (English)	479	i	Correlation with: Acne severity: r=-0.51 Generic QoL: r=0.32			

### *Acne Quality of Life Scale (Acne QOLS)*

Acne QOLS	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Ilgen 2005	Turkey (Not reported)				100	v	Cronbach's alpha: 0.87			
Gupta 1998	United States (English)	70	d	Exploratory factor analysis: 2 factors identified: Social (57.8% of variance) and vocational (11.4% of variance)	70	v	Cronbach's alpha: TotalQoL (12 items) =0.91 SOCQOL (9 items)= 0.94 VOCQOL (3 items) = 0.83 (NB: final version of AQOL=SOCQOL)			

Acne QOLS	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Gupta 1998	United States (English)	64	d	Pearson r TOTQOL 0.98 SOCQOL 0.99 VOCQOL 0.97						

Acne QOLS	Country (language) in which the questionnaire was evaluated	Hypothesis Testing					Responsiveness		
		n	Meth Qual	Result (rating)			n	Meth Qual	Result (rating)

Ilgen 2005	Turkey (Not reported)	108	d	<p>Convergent validity with DLQI Spearman: R=0.466 p&lt;0.05</p> <p>Known groups: Acne vs control: Statistically, AQOLS (p=0.001) and DLQI (p=0.000) scores of the patients with acne were found to be significantly higher as compared to the control group (statistical test not stated)</p> <p>Known groups Acne severity: No correlation between AQOLS or DLQI and acne severity</p>			
Gupta 1998	United States (English)	70	d	<p>Convergent validity Pearson r</p> <p><i>TOTQOL</i>: BSI r&gt;0.35 p&lt;0.05 CRDS r=0.44 p=0.01 IDS r=-0.50 p=0.006 Rosenberg's Self esteem r=0.42 p=0.01</p> <p><i>SOCQOL</i>: BSI r&gt;0.3 p&lt;0.05 CRDS r=0.31 p=0.03 IDS r=-0.36 p=0.003 Self esteem r=0.42 p=0.009</p> <p><i>VOCQOL</i>: BSI r&gt;0.4 p&lt;0.05 CRDS r=0.62 p=0.01 IDS r=-0.32 p=0.04 Self esteem r=0.33 p=0.01</p> <p>Known groups Acne severity indices: TOTQOL and VOCQOL no correlations SOCQOL: Pustules r=0.34 p=0.006 Scarring r= 0.39 p=0.002</p>			

BSI: Brief Symptom Inventory; IDS: Interpersonal Dependency Inventory; CRSD: Carroll Rating Scale for Depression

## Acne-QoL

Acne QoL	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Martin 2001	USA (English)				111	i	Initial scores too high; Scores not reported after 5 items dropped due to redundancy			
Fehnel 2002	USA (English)	450	v	The majority of the items produced high factor loadings, suggesting that they fit well within their subscales, Values for the goodness-of-fit indices provide further evidence of appropriate model fit: 0.98 (GFI), 0.97 (AGFI), and 0.99 (CFI). The Root Mean Square Error of Approximation (RMSEA) was 0.07.	450	d	Cronbach's alpha ranged from 0.87 to 0.96 for the Self-Perception, Role-Emo-tional, and Role-Social subscales. Estimates for the Acne Symptoms subscale ranged from 0.77–0.86 across study timepoints			

Acne QoL	Country (language) in which the questionnaire was evaluated	Reliability	Measurement Error	Criterion Validity
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		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Acne-QoL Martin 2001	USA (English)	111	a	ICC and CCC ranged 0.84-0.90 among domain scores; ranged from 0.50-0.70 among items				111	i	Cronbach's alpha calculated but not presented

Acne QoL	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Acne-QoL Martin 2001		92	i	Known groups validity demonstrates worsening QoL scores with worsening severity (stats not reported)	92	i	Improvements in scores following treatment with isotretinoin (stats not reported)
		92	i	Improvement in lesion count was moderately to highly correlated with improvements in QoL scores (data not shown)			
Fehnel	USA (English)	450	a	<b>Convergent validity</b> correlation with physician acne assessments: <i>Lesion counts:</i> <i>End of study</i> Self-Perception -0.3* Role-Emotional -0.29* Role-Social -0.25* Acne Symptoms -0.35* <i>Physician Global Assessment</i> <i>End of study</i> Self-Perception -0.36* Role-Emotional -0.37*	231	v	Guyatt's responsiveness statistic (effect size) <i>Baseline to end of treatment (6 mos):</i> Self perception 0.41 Role Emotional 0.49 Role Social 0.44 Acne Symptoms 0.49  In a series of repeated measures ANOVAs, statistically significant interactions between visit (base-line, mid-study, and last) and treatment group (Estrostep vs. placebo) were observed for all subscales (p < 0:0001).

				Role-Social -0.32* Acne Symptoms -0.44*  <b>Discriminate validity</b> (lack of correlation with unrelated measures) <i>End of treatment</i> Blood pressure .03, .06, .06, .09 HR -.07, -.07, -.03, -.01 Height .1, .14, .12, .07			
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Acne QoL	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Kamamoto 2012	Brazilian Portuguese				80	v	Total score a=0.925 Self-perception a=.852 Role social a=.879 Role emotional a=.764 Acne symptoms a=.692			

Acne QoL	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Kamamoto 2012	Brazilian Portuguese	42	a	Self-perception ICC=.836 Role social ICC=.782 Role emotional ICC=.795 Acne symptoms ICC=.768						

Acne QoL	Country (language) in which the questionnaire was evaluated	Hypothesis Testing						Responsiveness		
		n	Meth Qual	Result (rating)			n	Meth Qual	Result (rating)	
Kamamoto 2012	Brazilian Portuguese	80	a	Known groups validity with acne severity: Mild acne had higher role-social scores than moderate acne (p=0.040). No associations						

				were noted for self-perception (p=0.168), role-emotional (p=0.908), or acne symptoms (p=0.584).			
Kamamoto 2012	Brazilian Portuguese	80	a	<p>Convergent validity with SF36 physical functioning domain and AcneQol domains:</p> <ul style="list-style-type: none"> <li>-Self-perception: 0.186</li> <li>-Role social: 0.106</li> <li>-Role emotional: -0.017</li> <li>-Acne symptoms: 0.082</li> </ul> <p>Convergent validity with SF36 mental health domain and AcneQol domains:</p> <ul style="list-style-type: none"> <li>-Self-perception: 0.265</li> <li>-Role social: 0.235</li> <li>-Role emotional: 0.183</li> <li>-Acne symptoms: 0.056</li> </ul>			

Acne QoL	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Tan 2011	French (Canada and France)	14	a	Pearson r (day 0, day 2-3): AcneQoL total score 0.77 (p<.001) Self Perception 0.75 (p<.002) Role Social 0.69 (p<.006) Role Emotional 0.66 (p=.01) Acne Symptoms 0.85 (p= p<.001)						

Acne QoL	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Tan 2011	French (Canada and France)				19	d	Mean score difference (SD): AcneQoL total score 19.7 (23.5) p= .002 Self Perception 8.3 (7.9) p<0.001 Role Social 2.6 (5.5) p=.056 Role Emotional 4.3 (6.8) p=.013 Acne Symptoms 4.5 (5.9) p=.004  Comparison with CADIFr: Mean score difference in CADI total score was -1.9 (p=.01) indicating improved QoL

Acne QoL	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Muvdi 2020	Colombia (Spanish)	349	v	EFA revealed a 3 factor structure: Self perception + Role social (8 items) Role emotional (4 items) Acne symptoms (3 items); 4 items were eliminated based on the factor analysis	349	v	Self-perception a=.86 Role social a=.90 Role emotional a=.84 Acne symptoms a=.74			

Acne QoL	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Muvdi 2020	Colombia (Spanish)	176	a	ICC (95% CI): Self-perception rc=.72 (.65-.79) Role social rc=.7 (.62-.77) Role emotional rc=.71 (.63-.78) Acne symptoms rc=.67 (.6-.75)						

Acne QoL	Country (language) in which the questionnaire was evaluated	Hypothesis Testing	Responsiveness

		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Muvdi 2020	Colombia (Spanish)	349	d	<p>Known groups comparison only of scores for Self -perception domain and patient reported acne severity (mild, moderate or severe). Actual scores presented and stated as significantly different (<math>p &lt; 0.0001</math>) (no r values reported):</p> <p>Mild acne <math>26.2 \pm 5.9</math>  Moderate acne: <math>23.1 \pm 5.6</math>  Severe acne: <math>17.4 \pm 6.2</math></p> <p>Convergent validity (Spearman rank R) with Measurement of Body Appearance (MBA) and:  Self Perception 0.45 (0.37-0.54)  Acne Symptoms 0.29 (0.19-0.38)</p> <p>Convergent validity (Spearman rank R) with Satisfaction with Life:  Role emotional -0.25 (-0.35-0.15)</p> <p>Convergent validity (Spearman rank R) with Satisfaction with state of health:  Role emotional -0.21 (-0.31-0.11)</p>	87	d	<p>Mean change (SD):</p> <p>Self perception  Role social  Role emotional  Acne symptoms</p> <p>SRM:  Self perception 0.90  Role social 0.67  Role emotional 0.61  Acne symptoms 0.84</p>

Acne QoL (short form)	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Saitta 2012	USA (English)				2813	d	Construct approach: At week 12, change in AcneQ4 with treatment 59% improvement vs 36% with vehicle (no stats)
Tan 2006	Canada (English)	434 Validation group 1 + 162 in validation group 2= 596	a	Convergent validity:Results in line with hypothesis: Correlation AcneQ4 total score with AcneQoL total scores r= 0.967 (p<0.001);			
Tan 2006		434 Validation group 1 + 162 in validation group 2= 596	v	Convergent validity:Results in line with hypothesis: Correlation AcneQ4 total score with IGA scores r=-0.239			
Tan 2006		434 validation group 1	i	Known groups AcneQoL total score and IGA R= -0.262 AcneQ4 total score and IGA R=-0.239			

Acne QoL (short form)	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Tan 2013	Canada/France (French)	14	d	ICC 0.73, p=0.001						

Acne QoL (short form)	Country (language) in which the questionnaire was evaluated	Hypothesis Testing	Responsiveness
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		n	Meth Qual	Result (rating	n	Meth Qual	Result (rating
Tan 2013					22	d	Mean difference 4.14 (95% CI 1.79-649) from Day 0 to Day 60

***Assessment of the Psychological and Social Effects of Acne (APSEA)***

APSEA	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Zauli 2014	Italian (Not reported)	100	d	“linear correlation” between acne severity and APSEA score (p=0.0019)	100	d	After treatment the mean reduction of APSEA score (84.32/44.62 = 1.89) was less marked than the reduction observed in acne severity (0.89/0.28 = 3.12).

**Cardiff Acne Disability Index (CADI)**

CADI	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Perić 2013	Serbia (Serbian)				228	v	Cronbach's alpha 0.82			
Kim 2017	Korea (Korean)	254	a	EFA identified 1 factor	254	v	Cronbach's alpha 0.827			
Jankovic 2013	Serbia (Serbian)	353	a	Two factors identified in exploratory factor analysis (items 1-3 and items 4-5)	353	v	Cronbach's alpha 0.79			
Grando 2015	Brazil (Portuguese)	100	a	EFA identified 2 factors: "general acne" (items 1, 2, 4, and 5) and "truncal acne"(item 3)	100	d	Cronbach's alpha 0.73			

Gupta 2015	India (Hindi)	100	a	EFA identified 2 factors: “emotional well being” and “social impact”	100	d	Cronbach’s alpha 0.722			
Law 2009	China (Chinese)				85	v	Cronbach’s alpha 0.763			
Aghaei 2009	Saudi Arabia (Persian)	100	a	EFA identified 2 factors: “emotional well being” and “social life”	100	d	Cronbach’s alpha = 0.79			
Dreno 2004	France (French)				22	v	Cronbach’s alpha = 0.87			
Salek 1996	United Kingdom (English)				70	d	Cronbach’s alpha = 0.90			

CADI	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Grando 2015	Brazil (Portuguese)	20	d	ICC = 0.89						
Law 2009	China (Chinese)	33	d	ICC=0.784 Correlation rho=0.795						
Dreno 2004	France (French)	16	d	ICC=0.87						

Salek 1996	United Kingdom (English)	70	d	Pearson correlation = 0.98; p<0.001					
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CADI	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Kim 2017	Korea (Korean)	254	v	Path analysis KAGS->CADI: Standardized estimate = 0.526, p<0.001			
Zaraa 2013	Tunisia (French)	82	i	“Positive correlation” between CADI and ECLA score, but no specific results presented.			
Jankovic 2013	Serbia (Serbian)	353	a	Spearman’s rho with CDLQI = 0.66; p<0.001			
Grando 2015	Brazil (Portuguese)	100	a	Spearman’s rho with CDLQI/DLQI= 0.802 p<0.001			
Grando 2015	Brazil (Portuguese)	100	a	Spearman’s rho with GAGS = 0.234 p=0.019			
Gupta 2015	India (Hindi)	100	a	Spearman’s rho with DLQI = 0.880; p=0.01			
Law 2009	China (Chinese)	85	a	Spearman’s rho with DLQI= 0.58; p=0.004			
Law 2009	China (Chinese)	85	a	Spearman’s rho with Cantonese DLQI= 0.72; p<0.001			
Law 2009	China (Chinese)	85	a	Spearman’s rho with GAGS = 0.352; p=0.001			
Walker 2005	Scotland (English)	147	a	Compared with CDLQI Spearman’s rho = 0.65			
Alsulaimani 2020	Saudi Arabia (Arabic)	45	v	Pearson correlation coefficient with GAGS = 0.327; p=0.016			

Alsulaimani 2020	Saudi Arabia (Arabic)	45	v	Pearson correlation coefficient with IGA = 0.233; p=0.091			
Alsulaimani 2020	Saudi Arabia (Arabic)	45	a	Pearson correlation coefficient with DLQI = 0.649; p<0.0001			
Aghaei 2009	Saudi Arabia (Persian)	100	a	Known group validity: moderate- to-severe acne versus mild type (8.2 versus 4.3) (p<0.001).			
Salek 1996	United Kingdom (English)	70	v	Pearson correlation with ADI = 0.48, p<0.01			
Salek 1996	United Kingdom (English)	100	v	Spearman correlation with acne clinical severity= 0.23; p<0.05			
Oakley 1996	New Zealand (English)	104	i	“The ADI correlated poorly with the clinical severity of the acne.”			
Oakley 1996	New Zealand (English)				62	i	Thirty-two patients had received isotretinoin. Their median pre-treatment ADI was 7 (range 3-14). After treatment it was 2 (range 0-6, Thirty patients treated by other means had a median pre-treatment ADI of 5 (range 2-11) and a median post-treatment ADI of 3 (range 0-10).
Motley 1992	United Kingdom (English)	66	i	Only p-values given, correlations on measured on each question not total score	50	i	Median IGA score decreased from 1.5 to 0.1 for the face (no statistical comparisons provided)

Échelle de Cotation des Lésions d’Acné (ECLA) scale3  
Global Acne Grading System (GAGs)  
Korean acne grading system (KAGS)

## CompAQ

CompAQ	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
McLellan 2018	Canada, United States, United Kingdom (English)	234	V	4-domain confirmatory did not fit well. Exploratory factor analysis suggested that the fit was better with a 5 domain model. Two confirmatory factor analyses suggested moderate fit for the 5-domain structure: facial acne ( $\chi^2 = 367.687$ , $P < .001$ ; CFI = 0.929; TLI = 0.915; RMSEA = 0.08; SRMR = 0.056) and torso acne ( $\chi^2 = 294.015$ , $P < .001$ ; CFI = 0.931; TLI = 0.917; RMSEA = 0.098; SRMR = 0.054).	234	v	Cronbach's alphas: Psychological/emotional = 0.951 Social judgement from others = 0.908 Social interactions = 0.944 Treatment concerns = 0.864 Physical symptoms = 0.839			
McLellan 2018 (short form)	Canada, United States, United Kingdom (English)	234	V	CFA conducted on the short form suggests good fit for both face ( $\chi^2 = 3.60$ , $P < .001$ ; CFI = 0.999; df = 3 TLI = 0.997; RMSEA = 0.025; SRMR = 0.013) and torso	234	v	Cronbach alpha= 0.84			

				acne ( $\chi^2 = 5.65, P < .001$ ; CFI = 0.987; TLI = 0.958; df = 3 RMSEA = 0.098; SRMR = 0.027).					
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CompAQ	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
McLellan 2018	Canada, United States, United Kingdom (English)	234	a	DLQI: Psychological emotional: -0.44 Judgment from others: -0.43 Social interaction: -0.49 Treatment concerns: -0.40 Physical symptoms: -0.46  QLES: Psychological emotional: -0.36 Judgment from others: -0.42 Social interaction: -0.40 Treatment concerns: -0.24 Physical symptoms: -0.35  DASS-21 depression:			



				Psychological emotional: 0.43 Judgment from others: 0.50 Social interaction: 0.56 Treatment concerns: 0.38 Physical symptoms: 0.39  Also correlated with DASS-21 anxiety, and stress			
McLellan 2018 (short form)	Canada, United States, United Kingdom (English)	234	a	The short form was correlated with DLQI (-0.55), DASS-21, Depression, (0.51) anxiety(0.48), stress(0.55), and QLES (=0.44)			

## **DERMATOLOGY SPECIFIC**

### **CDLQI**

CDLQI	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Janković 2013	Slovenia (Serbian)	353	a	EFA identified 1 factor	353	v	Cronbach's alpha = 0.870 overall and for individual items: Symptoms (items 1 + 2) = 0.554, personal relationship (items 3 + 8) = 0.632, Leisure (items 4,5,6) = 0.630, School/holiday (item 7), sleeping (item 9), Treatment (item 10) = n/a			
Reljić 2014	Serbia (Serbian)				199	d	Cronbach's alpha overall = 0.83			

CDLQI	Country (language) in which the questionnaire was evaluated	Hypothesis Testing					Responsiveness		
		n	Meth Qual	Result (rating)			n	Meth Qual	Result (rating)
Tasoula 2012	Greece (not reported)	491	d	Mean CDLQI compared between acne severity determined by lesion count was significant ( $p < 0.0001$ ) with mean scores mild (2.94) moderate (5.40), and severe (12.05)					
Tasoula 2012	Greece (not reported)	491	i	$P < 0.0001$ for all comparisons. The 3 medians are given for each score i.e. Score (mild, moderate, severe) Embarrassment and decreased self esteem (0.54, 0.94, 1.97) Symptoms (0.53, 0.98, 1.46) Teasing-feelings of unworthiness (0.32, 0.67, 1.46) Dressing (0.22, 0.49, 1.29), Discomfort of treatment (0.25, 0.43, 1.00), friendship-Relationship building (0.16, 0.44, 0.96), School work- Holiday time (0.23, 0.41, 1.11), Hobbies (0.19, 0.41, 1.00), sports (0.13, 0.29, 0.93), sleep disorders (0.12, 0.40, 0.86)					

Janković 2013	Slovenia (Serbian)	353	d	Spearman rho with CADI = 0.66, p<0.0001			
Walker 2005	Scotland (English)	147	a	Compared with CADI Spearman's rho = 0.65			

## DLQI

DQLI	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Takahashi 2006	Japan (Japanese)	197	a	Exploratory factor analysis confirmed unidimensionality	197	v	Cronbach's alpha = 0.83			

DQLI	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Takahashi 2006	Japan (Japanese)	44	d	ICC = 0.90						

DQLI	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Alsulaimani 2020	Saudi Arabia (Arabic)	54	v	Pearson correlation coefficient = 0.197; p=0.153			
Alsulaimani 2020	Saudi Arabia (Arabic)	54	v	Pearson correlation coefficient = 0.132; p=0.341			
Alsulaimani 2020	Saudi Arabia (Arabic)	54	V (?)	Pearson correlation coefficient = 0.649; p<0.0001			
Klassen 2000	United Kingdom (English)				58	i	4 months: Mean difference from baseline = -5.7 effect size = 0.98; p=0.0

							12 months: Mean difference from baseline = -6.1 Effect size = 1.2; p<0.01
Richter 2016	Germany (German)				41	d	Effect size for overall group was 0.64. For 2-3 grade ISGA improvement=0.66, for 1 grade improvement = 0.62, for unchanged = 0.23
Newton 1997	United Kingdom (English)				4 months = 58 12 months = 51	i	Effects size for 4 months = 0.98 (0.70-1.27) Effect size for 1 year = 1.12 (0.81-1.43)
Takahashi 2006	Japan (Japanese)	197	a	Pearson correlations between DLQI and Role-physical = -0.33 Vitality = -0.42 Mental health = -0.48 Social functioning = -0.49 Role-emotional = -0.49			
Takahashi 2006	Japan (Japanese)	197	a	Known groups validity with IGA (p<0.01) and perceived acne symptom severity (p<0.001)			

Investigators Static Global Assessment (ISGA)

**DSQL**

DSQL	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Anderson 1998	United States (English)				282	v	Cronbach's alpha for Symptoms = 0.82 ADLs = 0.85 Social activities = 0.96 Work/School = 0.92 Self-perceptions = 0.93 Total score = 0.90			
Anderson 1997	United States (English)	392	a	6 factors identified that account for 86% of variance  8/9 of symptom items = 33% of variance explained 5/6 work/school items; 3/5 ADL items; one symptom item = 60% 9/9 social items = 64% 5/5 self perception = 55% 9/9 SF-36 mental well-being and vitality items = 34%	392	v	Cronbach's alpha for Symptoms = 0.78 ADLs = 0.78 Social functioning = 0.95 Work/School = 0.90 Self-perceptions = 0.92 SF-36 Mental = 0.75 SF-36 Vitality = 0.74			

DSQL	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Anderson 1998	United States (English)	282	a	ICC for Symptoms = 0.84 ADLs = 0.72 Social activities = 0.83 Work/School = 0.77 Self-perceptions = 0.87 DSQL total = 0.92						
Anderson 1997	United States (English)	392	d	Correlations for Symptoms = 0.82 ADLs = 0.82 Social functioning = 0.88 Work/School = 0.83 Self-perceptions = 0.89 SF-36 Mental = 0.81 SF-36 Vitality = 0.81						

DSQL	Country (language) in which the questionnaire was evaluated	Hypothesis Testing	Responsiveness
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		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Anderson 1998	United States (English)	282	v	Pearson correlation of DSQL total score with patient-rated severity= 0.59	282	a	Pearson correlation of DSQL total score with physician-rated change in severity = -0.34, patient-rated severity = 0.61, total lesion count = 0.37
Anderson 1998	United States (English)	282	v	Divergent validity Pearson correlation of DSQL total score with Marlowe-Crowne social desirability = 0.09			
Anderson 1997	United States (English)	392	a	Pearson correlation DSQL vs distress rating Physical symptoms = 0.63 Daily activities = 0.52 Social functioning = 0.51 Work/school = 0.53 Self-perception = 0.42 SF-36 Mental = 0.35 SF-36 Vitality = 0.27			
DSQL	United States (English)	392	v	Pearson correlation DSQL vs Severity rating Physical symptoms = 0.43 Daily activities = 0.44 Social functioning = 0.41 Work/school = 0.21 Self-perception = 0.54 SF-36 Mental = 0.21 SF-36 Vitality = 0.19			
Anderson 1997	United States (English)	392	a	Pearson correlation DSQL vs SDS Physical symptoms = 0.08 Daily activities = -0.08 Social functioning = 0.06 Work/school = 0.05 Self-perception = 0.09 SF-36 Mental = 0.29 SF-36 Vitality = 0.16			



Anderson 1997	United States (English)	392	v	<p>Comparisons of acne scarring with DSQL level</p> <p>Significant differences seen for Daily activities (p=0.031), Social functioning (p=0.016), Work/school (p=0.045), Self-perception (p=0.003), SF-36 Vitality (p=0.028)</p> <p>DSQL was higher for scarring for all categories</p>			
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**OSSAS**

PROM	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Arbuckle 2009	United States (English)	196	a	Factor loading Sensation (4 items) = 0.61-0.80 Visual (3 items) = 0.64-0.72 Tactile (3 items) = 0.42-0.74 Blotting = (1 item) = 0.54	196	v	Cronbach's alpha for sensation = 0.86 Visual = 0.83 Tactile = 0.89			

PROM	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Arbuckle 2009	United States (English)	152	v	No change on PGI-C, ICC Sensation = 0.71 Visual = 0.64 Tactile = 0.63 Blotting = 0.62						
Arbuckle 2009	United States (English)	152	v	No change on CGI-C, ICC Sensation = 0.72						

				Visual = 0.61 Tactile = 0.63 Blotting = 0.58						
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PROM	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Arbuckle 2009	United States (English)	196	a	Correlations between OSSAS and Skindex-29 ranged from 0.20 to 0.38			
Arbuckle 2009	United States (English)	196	a	Correlations between OSSAS and Acne-QoL ranged from -0.10 to -0.35			
Arbuckle 2009	United States (English)	196	a	All OSSAS domain score means stratified by PGI-S severity levels were significantly different (P<0.0001 for all)			
Arbuckle 2009	United States (English)	196	a	All OSSAS domain score means stratified by subject self-assessment of skin oiliness (mild, moderate, severe) were significantly different (P<0.0001 for all)			
Arbuckle 2009	United States (English)	196	a	All OSSAS domain score means stratified by subject self-assessment of bother were significantly different (P<0.0001 for all)			
Arbuckle 2009	United States (English)	196	a	For mean OSSAS domain scores stratified by CGI-S nose area severity levels (mildly, moderately, severely) only those for the visual and tactile domain scores were significant (p=0.0086 and p=0.0046 respectively)			
Arbuckle 2009	United States (English)	196	a	For mean OSSAS domain scores stratified by CGI-S forehead area severity levels (mildly, moderately, severely) visual, tactile, and blotting domains had significant differences in means between severity levels (p=0.0333, 0.0035, and 0.0128 respectively)			
Arbuckle 2009	United States (English)	196	a	OSSAS domain sub-scores correlated with sebumeter assessment as follows: Sensation = 0.01 Visual = 0.22 Tactile = 0.32 Blotting = 0.34			

Patient Global Impression of Change (PGI-C) item.  
Clinical Global Impression of Change (CGI-C) item.

**OSIS**

PROM	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Arbuckle 2009	United States (English)	196	v	All items performed well, loading at a level of >0.30 with one factor. Three items asking about the annoyance/irritability of oily skin loaded most highly on the first factor (factor coefficients of 0.77, 0.73 and 0.57, respectively) and were included on the Annoyance scale. The three remaining items loaded most highly on the second factor (coefficients of 0.84, 0.75 and 0.52, respectively) and were included in the Self-Image scale.	196	v	Cronbach's alpha for Self image = 0.87 Annoyance = 0.82			

PROM	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Arbuckle 2009	United States (English)	152	v	No change on PGI-C, ICC Self-image = 0.69 Annoyance = 0.74						
Arbuckle 2009	United States (English)	152	v	No change on CGI-C, ICC Self-image = 0.66 Annoyance = 0.70						

PROM	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Arbuckle 2009	United States (English)	196	a	Correlations between OSSAS and Skindex-29 ranged from 0.37 to 0.73			
Arbuckle 2009	United States (English)	196	a	Correlations between OSSAS and Acne-QoL ranged from -0.48 to -0.73			
Arbuckle 2009	United States (English)	196	a	OSIS subdomains self-image and annoyance had significantly different means between subject self-assessment of bother scores (Somewhat bothered, very bothered, extremely bothered). (P<0.0001 for all)			
Arbuckle 2009	United States (English)	196	a	OSIS subdomains self-image and annoyance had significantly different means between PGI-S scores. (P<0.0001 for all)			
Arbuckle 2009	United States (English)	196	a	OSIS subdomains self-image and annoyance had significantly different means between levels (mild, moderate, severe) of subject self-assessment of skin oiliness. (P<0.0001 for all)			

Patient Global Impression of Change (PGI-C) item.  
Clinical Global Impression of Change (CGI-C) item.

**Skindex-29**

Skindex-29	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Jones-Caballero 2007	Spain (Spanish)	1892 (baseline) and 1613 (final)	a	Baseline correlation between symptoms (r=0.09), Emotions (0.11), and functioning (0.11) and objective severity Final correlations between objective severity and symptoms (r=0.30), Emotions (0.29), and Functioning (0.26)	1613	d	Effect sizes for skindex scores by objective severity change: Symptoms scale: improved (0.59), did not change (0.13), worsened (-0.26) Emotions: Improved (0.55), did not change (0.03), and worsened (-0.07) Functioning: Improved (0.39), did not change (0.02), and worsened (-0.14)
Jones-Caballero 2007	Spain (Spanish)	1892 (baseline) and 1613 (final)	d	Known groups validity: Skindex symptoms, emotions, and functioning scores increased with increasing objective severity at baseline (p<0.001 for each) and final (p<0.001)	1630	d	Effect sizes for skindex scores by subjective severity change: Symptoms scale: improved (0.63), did not change (0.17), worsened (-0.21) Emotions: Improved (0.58), did not change (0.16), and worsened (0.02) Functioning:

							Improved (0.41), did not change (0.10), and worsened (-0.13)
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**GENERIC**

***UK Sickness Impact Profile (UKSIP)***

UKSIP	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Salek 1996	United Kingdom (English)				70	d	Cronbach's alpha = 0.80			

UKSIP	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Salek 1996	United Kingdom (English)	70	d	Pearson correlation = 0.99, >0.83 for each category score						

UKSIP	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Salek 1996	United Kingdom (English)	100	V	Spearman correlation with acne clinical severity = 0.10; p>0.05			

***EQ-5D***

EQ-5D	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Klassen 2000	United Kingdom (English)				56	i	4 months: Mean difference from baseline = 0.07 effect size = -0.44; p=0.03 12 months: Mean difference from baseline = 0.09 Effect size = -0.53; p<0.01

**SF-36**

SF-36	Country (language) in which the questionnaire was evaluated	Hypothesis Testing			Responsiveness		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Klassen 2000	United Kingdom (English)				52	i	PCS: 4 months: Mean difference from baseline = 2.3 effect size = -0.35; p=0.04 12 months: Mean difference from baseline = 2.3 Effect size = -0.34; p<0.01  MCS: 4 months: Mean difference from baseline = 2.9 effect size = -0.30; p=0.06 12 months: Mean difference from baseline = 4.6 Effect size = -0.45; p<0.01

### ***Patient Benefit Index (PBI)***

<b>PBI</b>	Country (language) in which the questionnaire was evaluated	Structural validity			Internal Consistency			Cross-cultural validity/measurement invariance		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Augustin 2009 (cross sectional)	Germany (German)				500 (50 acne)	i	Cronbach's alpha = 0.91			
Augustin 2009 (longitudinal)	Germany (German)				824, 782, 732	i	Cronbach's alpha = 0.97			

<b>PBI</b>	Country (language) in which the questionnaire was evaluated	Reliability			Measurement Error			Criterion Validity		
		n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)	n	Meth Qual	Result (rating)
Augustin 2009	Germany (German)	732	i	r=0.68						

<b>PBI</b>	Country (language) in which the questionnaire was evaluated	Hypothesis Testing					Responsiveness		
		n	Meth Qual	Result (rating)			n	Meth Qual	Result (rating)
Augustin 2009	Germany (German)	711-728	i	Pearson correlation with physician rate of acne improvement = 0.34, patient rating of improvement = 0.34, improvement in quality of life = 0.44, patient rating of medication efficacy = 0.57, patient recommendation of medication = 0.53 (all p<0.001)			732	i	Two-tailed t-test at T2 and T3 = Difference in means = -10.65; df= 722; p<0.001

***PROMIS Anxiety***

<b>PROMIS Anxiety</b>	Country (language) in which the questionnaire was evaluated	Hypothesis Testing		
		n	Meth Qual	Result (rating)
Esaa 2020	United States (English)	40	d	More clinically significant PROMIS scores seen in severe acne disease than mild p=0.048
Esaa 2020	United States (English)	40	d	More clinically significant PROMIS scores seen in those with acne scarring than those without p=0.005

**eAppendix 1. Search Strategy**

(A) PubMed search strategy (Inception-February 2021)

Reviewers generated key terms for retrieved patient-reported outcome measures identified previously and adapted these terms for PubMed/MEDLINE. The resulting instrument terms were combined with acne disease search terms and a search filter used by Terwee *et al.*<sup>1</sup> to identify clinimetric studies.

#1	“Quality of Life”[MeSH] OR HR PRO[tiab] OR HRPRO[tiab] OR HRQL[tiab] OR HRQoL[tiab] OR QL[tiab] OR QoL[tiab] OR quality of life[tiab] OR life quality[tiab] OR health index*[tiab] OR health indices[tiab] OR health profile*[tiab] OR health status[tiab] OR impact*[tiab] OR disability[tiab]
#2	"Acne Vulgaris"[MeSH] or Acne[tiab] or Acne Vulgaris[tiab]
#3	Questionnair*[tiab] OR index*[tiab] OR indicies[tiab] OR scale*[tiab] OR assessment*[tiab] OR instrument*[tiab] OR profile*[tiab] OR survey*[tiab] OR inventory[tiab] OR form[tiab] OR skindex[tiab] OR DLQI[tiab] OR CompAQ[tiab] OR Acne Radar[tiab] OR EQ 5D[tiab] OR European Quality of Life 5 Dimensions[tiab] OR SF 12[tiab] OR SF 36[tiab] OR WHOQOL[tiab]
#4	(instrumentation[sh] OR methods[sh] OR “Validation Study”[pt] OR “Comparative Study”[pt] OR “psychometrics”[MeSH] OR psychometr*[tiab] OR clinimetr*[tw] OR clinometr*[tw] OR “outcome assessment (health care)”[MeSH] OR “outcome assessment”[tiab] OR “outcome measure”[tw] OR “observer variation”[MeSH] OR “observer variation”[tiab] OR “Health Status Indicators”[Mesh] OR “reproducibility of results”[MeSH] OR reproducib*[tiab] OR “discriminant analysis”[MeSH] OR reliab*[tiab] OR unreliab*[tiab] OR valid*[tiab] OR “coefficient of variation”[tiab] OR coefficient[tiab] OR homogeneity[tiab] OR

homogeneous[tiab] OR “internal consistency”[tiab] OR (cronbach\*[tiab] AND (alpha[tiab] OR alphas[tiab])) OR (item[tiab] AND (correlation\*[tiab] OR selection\*[tiab] OR reduction\*[tiab])) OR agreement[tw] OR precision[tw] OR imprecision[tw] OR “precise values”[tw] OR test-retest[tiab] OR (test[tiab] AND retest[tiab]) OR (reliab\*[tiab] AND (test[tiab] OR retest[tiab])) OR stability[tiab] OR interrater[tiab] OR inter-rater[tiab] OR intrarater[tiab] OR intra-rater[tiab] OR intertester[tiab] OR inter-tester[tiab] OR intratester[tiab] OR intra-tester[tiab] OR interobserver[tiab] OR inter-observer[tiab] OR intraobserver[tiab] OR intra-observer[tiab] OR intertechnician[tiab] OR inter-technician[tiab] OR intratechnician[tiab] OR intra-technician[tiab] OR interexaminer[tiab] OR inter-examiner[tiab] OR intraexaminer[tiab] OR intra-examiner[tiab] OR interassay[tiab] OR inter-assay[tiab] OR intraassay[tiab] OR intra-assay[tiab] OR interindividual[tiab] OR inter-individual[tiab] OR intraindividual[tiab] OR intra-individual[tiab] OR interparticipant[tiab] OR inter-participant[tiab] OR intraparticipant[tiab] OR intra-participant[tiab] OR kappa[tiab] OR kappa’s[tiab] OR kappas[tiab] OR repeatab\*[tw] OR ((replicab\*[tw] OR repeated[tw]) AND (measure[tw] OR measures[tw] OR findings[tw] OR result[tw] OR results[tw] OR test[tw] OR tests[tw])) OR generaliza\*[tiab] OR generalisa\*[tiab] OR concordance[tiab] OR (intraclass[tiab] AND correlation\*[tiab]) OR discriminative[tiab] OR “known group”[tiab] OR “factor analysis”[tiab] OR “factor analyses”[tiab] OR “factor structure”[tiab] OR “factor structures”[tiab] OR dimension\*[tiab] OR subscale\*[tiab] OR (multitrait[tiab] AND scaling[tiab] AND (analysis[tiab] OR analyses[tiab])) OR “item discriminant”[tiab] OR “interscale correlation\*”[tiab] OR error[tiab] OR errors[tiab] OR “individual variability”[tiab] OR “interval variability”[tiab] OR “rate variability”[tiab] OR (variability[tiab] AND (analysis[tiab] OR values[tiab])) OR (uncertainty[tiab] AND (measurement[tiab] OR measuring[tiab])) OR “standard error of measurement”[tiab] OR sensitiv\*[tiab] OR responsive\*[tiab] OR (limit[tiab] AND detection[tiab]) OR “minimal

	detectable concentration"[tiab] OR interpretab*[tiab] OR ((minimal[tiab] OR minimally[tiab] OR clinical[tiab] OR clinically[tiab]) AND (important[tiab] OR significant[tiab] OR detectable[tiab]) AND (change[tiab] OR difference[tiab])) OR (small*[tiab] AND (real[tiab] OR detectable[tiab]) AND (change[tiab] OR difference[tiab])) OR "meaningful change"[tiab] OR "ceiling effect"[tiab] OR "floor effect"[tiab] OR "Item response model"[tiab] OR IRT[tiab] OR Rasch[tiab] OR "Differential item functioning"[tiab] OR DIF[tiab] OR "computer adaptive testing"[tiab] OR "item bank"[tiab] OR "cross-cultural equivalence"[tiab])
<b>#5</b>	<b>1 AND 2 AND 3 AND 4</b>
<b>#6</b>	NOT ("addresses"[Publication Type] OR "biography"[Publication Type] OR "case reports"[Publication Type] OR "comment"[Publication Type] OR "directory"[Publication Type] OR "editorial"[Publication Type] OR "festschrift"[Publication Type] OR "interview"[Publication Type] OR "lectures"[Publication Type] OR "legal cases"[Publication Type] OR "legislation"[Publication Type] OR "letter"[Publication Type] OR "news"[Publication Type] OR "newspaper article"[Publication Type] OR "patient education handout"[Publication Type] OR "popular works"[Publication Type] OR "congresses"[Publication Type] OR "consensus development conference"[Publication Type] OR "consensus development conference, nih"[Publication Type] OR "practice guideline"[Publication Type]) NOT ("animals"[MeSH Terms] NOT "humans"[MeSH Terms])

(B) EMBASE search strategy (Inception-February 2021)

Reviewers generated key terms for retrieved patient-reported outcome measures identified previously and adapted these terms for EMBASE. The resulting instrument terms were combined with acne disease search terms and a search filter adapted from Chiarotto *et. al.*<sup>2</sup> to identify clinimetric studies.



1	'acne vulgaris'/exp OR 'acne':ab,ti OR 'acne vulgaris':ab,ti
2	'HR-PRO':ab,ti OR 'HRPRO':ab,ti OR 'HRQL':ab,ti OR 'HRQoL':ab,ti OR 'QL':ab,ti OR 'QoL':ab,ti OR 'quality of life':ab,ti OR 'life quality':ab,ti OR 'health index*':ab,ti OR 'health indices':ab,ti OR 'health profile*':ab,ti OR 'health status':ab,ti OR 'impact*':ab,ti OR 'disability':ab,ti OR 'quality of life'/exp OR 'quality of life assessment'/exp
3	'intermethod comparison'/exp OR 'data collection method'/exp OR 'validation study'/exp OR 'feasibility study'/exp OR 'pilot study'/exp OR 'psychometry'/exp OR 'reproducibility'/exp OR reproducib*:ab,ti OR 'audit':ab,ti OR psychometr*:ab,ti OR clinimetr*:ab,ti OR clinometr*:ab,ti OR 'observer variation'/exp OR 'observer variation':ab,ti OR 'discriminant analysis'/exp OR 'validity'/exp OR reliab*:ab,ti OR valid*:ab,ti OR 'coefficient':ab,ti OR 'internal consistency':ab,ti OR (cronbach*:ab,ti AND ('alpha':ab,ti OR 'alphas':ab,ti)) OR 'item correlation':ab,ti OR 'item correlations':ab,ti OR 'item selection':ab,ti OR 'item selections':ab,ti OR 'item reduction':ab,ti OR 'item reductions':ab,ti OR 'agreement':ab,ti OR 'precision':ab,ti OR 'imprecision':ab,ti OR 'precise values':ab,ti OR 'test-retest':ab,ti OR ('test':ab,ti AND 'retest':ab,ti) OR (reliab*:ab,ti AND ('test':ab,ti OR 'retest':ab,ti)) OR 'stability':ab,ti OR 'interrater':ab,ti OR 'inter-rater':ab,ti OR 'intrarater':ab,ti OR 'intra-rater':ab,ti OR 'intertester':ab,ti OR 'inter-tester':ab,ti OR 'intratester':ab,ti OR 'intra-tester':ab,ti OR 'interobeserver':ab,ti OR 'inter-observer':ab,ti OR 'intraobserver':ab,ti OR 'intra-observer':ab,ti OR 'intertechnician':ab,ti OR 'inter-technician':ab,ti OR 'intratechnician':ab,ti OR 'intra-technician':ab,ti OR 'interexaminer':ab,ti OR 'inter-examiner':ab,ti OR 'intraexaminer':ab,ti OR 'intra-examiner':ab,ti OR 'interassay':ab,ti OR 'inter-assay':ab,ti OR 'intraassay':ab,ti OR 'intra-assay':ab,ti OR 'interindividual':ab,ti OR 'inter-individual':ab,ti OR 'intraindividual':ab,ti

OR 'intra-individual':ab,ti OR 'interparticipant':ab,ti OR 'inter-participant':ab,ti OR 'intraparticipant':ab,ti OR 'intra-participant':ab,ti OR 'kappa':ab,ti OR 'kappas':ab,ti OR 'coefficient of variation':ab,ti OR repeatab\*:ab,ti OR (replicab\*:ab,ti OR 'repeated':ab,ti AND ('measure':ab,ti OR 'measures':ab,ti OR 'findings':ab,ti OR 'result':ab,ti OR 'results':ab,ti OR 'test':ab,ti OR 'tests':ab,ti)) OR generaliza\*:ab,ti OR generalisa\*:ab,ti OR 'concordance':ab,ti OR ('intraclass':ab,ti AND correlation\*:ab,ti) OR 'discriminative':ab,ti OR 'known group':ab,ti OR 'factor analysis':ab,ti OR 'factor analyses':ab,ti OR 'factor structure':ab,ti OR 'factor structures':ab,ti OR 'dimensionality':ab,ti OR subscale\*:ab,ti OR 'multitrait scaling analysis':ab,ti OR 'multitrait scaling analyses':ab,ti OR 'item discriminant':ab,ti OR 'interscale correlation':ab,ti OR 'interscale correlations':ab,ti OR ('error':ab,ti OR 'errors':ab,ti AND (measure\*:ab,ti OR correlat\*:ab,ti OR evaluat\*:ab,ti OR 'accuracy':ab,ti OR 'accurate':ab,ti OR 'precision':ab,ti OR 'mean':ab,ti)) OR 'individual variability':ab,ti OR 'interval variability':ab,ti OR 'rate variability':ab,ti OR 'variability analysis':ab,ti OR ('uncertainty':ab,ti AND ('measurement':ab,ti OR 'measuring':ab,ti)) OR 'standard error of measurement':ab,ti OR sensitiv\*:ab,ti OR responsive\*:ab,ti OR ('limit':ab,ti AND 'detection':ab,ti) OR 'minimal detectable concentration':ab,ti OR interpretab\*:ab,ti OR (small\*:ab,ti AND ('real':ab,ti OR 'detectable':ab,ti) AND ('change':ab,ti OR 'difference':ab,ti)) OR 'meaningful change':ab,ti OR 'minimal important change':ab,ti OR 'minimal important difference':ab,ti OR 'minimally important change':ab,ti OR 'minimally important difference':ab,ti OR 'minimal detectable change':ab,ti OR 'minimal detectable difference':ab,ti OR 'minimally detectable change':ab,ti OR 'minimally detectable difference':ab,ti OR 'minimal real change':ab,ti OR 'minimal real difference':ab,ti OR 'minimally real change':ab,ti OR 'minimally real difference':ab,ti OR 'ceiling effect':ab,ti OR 'floor effect':ab,ti OR 'item response

	model':ab,ti OR 'irt':ab,ti OR 'rasch':ab,ti OR 'differential item functioning':ab,ti OR 'dif':ab,ti OR 'computer adaptive testing':ab,ti OR 'item bank':ab,ti OR 'cross-cultural equivalence':ab,ti AND [embase]/lim
4	1 AND 2 AND 3

## eAppendix 2. Guidance for Evaluating Hypothesis Testing

### Expected correlation between HRQoL PROMs of interest and other measures

	HRQoL PROMs			Physician assessed disease severity measures	Other PROMs (not measuring HRQoL)
	Derm-specific	Generic	Acne-Specific	Lesion counts/IGA	Patient Global Assessment
Derm-specific	≥0.5	≥0.3	≥0.4	≥0.1 and <0.5	≥0.4
Generic	≥0.3	≥0.5	≥0.3	≥0.1 and <0.5	≥0.4
Acne-Specific	≥0.4	≥0.3	≥0.5	≥0.1 and <0.5	≥0.4

IGA: Investigator global assessment; PROM: patient-reported outcome measure; HRQoL: health related quality of life

#### **Other hypotheses:**

The strength of correlation of Acne-specific measures with other quality of life instruments will be as follows: Acne-specific > Derm-specific > Generic

The strength of correlation of Derm-specific measures with other quality of life instruments will be as follows: Derm-specific > Acne-specific > Generic.

## **eReferences.**

1. Terwee CB, Jansma EP, Riphagen II, de Vet HC. Development of a methodological PubMed search filter for finding studies on measurement properties of measurement instruments. *Qual Life Res.* 2009 Oct;18(8):1115-23. doi: 10.1007/s11136-009-9528-5. <https://www.cosmin.nl/tools/pubmed-search-filters/>
2. Chiarotto A, Terwee CB, Kamper SJ, Boers M, Ostelo RW. Evidence on the measurement properties of health-related quality of life instruments is largely missing in patients with low back pain: A systematic review. *J Clin Epidemiol.* 2018 Oct;102:23-37. doi: 10.1016/j.jclinepi.2018.05.006. Epub 2018 May 21