

## Measurement properties of quality-of-life outcome measures for children and adults with eczema: A systematic review update 2.0

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### Background

- **Atopic eczema (AE)** is a chronic inflammatory skin disease affecting about **20% of children** and up to **10% of adults**<sup>1</sup> that may have a detrimental impact on their **quality of life (QoL)**<sup>2</sup>.
- To assess QoL, self- or proxy-reported questionnaires, also called **patient-reported outcome measures (PROMs)**, are used.
- For eczema, several PROMs have been developed and validated, which were assessed in two **systematic reviews** in 2016/2017<sup>3,4</sup> and an update of the evidence was published in 2019<sup>5</sup>.

### Methods

- Application of the COnsensus-based Standards for the selection of health Measurement INstruments (**COSMIN**) methodology<sup>6</sup>
- **Steps**
  1. Systematic **literature search** in PubMed and Embase
  2. Evaluation of the **methodological quality** of the included **studies** using the COSMIN Risk of Bias Checklist
  3. Evaluation of the **methodological quality** of the identified **PROMs** according to criteria for good measurement properties
  4. **Grading** of the evidence and **recommendation**

**Table 1** Degrees of recommendation

Category A	Category B	Category C
PROMs can be recommended for use and results obtained with these PROMs can be trusted.	PROMs have potential to be recommended for use, but they require further research to assess the quality of these PROMs.	PROMs should not be recommended for use.

### Conclusion

- **Two PROMs** measuring QoL in infants and adults with AE can be **recommended** for use:
  - the **proxy-reported CADIS-SF** in *infants*
  - the **self-reported Skindex** in *adults*
- These results could potentially influence the **HOME recommendations of suitable instruments** in AE (see Figure 1).
- Future research should focus on the **category B PROMs** in order to close validation gaps.

**Figure 1** Overview of final recommendations

Currently recommended instruments by HOME		Category A instruments
Infants	IDQoL	CADIS-SF15
Children	CDLQI	?
Adults	DLQI	Skindex

### AIM

...to systematically assess the **measurement properties** of **skin- or disease-specific PROMs** for the assessment of **QoL** in children and adults with **AE** by evaluating development and validation studies.

...to **integrate** these findings into those from the 2019 systematic review update.

### Results

- Data from **12 articles** reporting on **12 different PROMs** in 45 single studies on measurement properties was included.
- **Changes since 2019**
  - **Skindex** in category **A** (formerly category B)
  - **CADIS-SF** in category **A** (formerly category B)
  - **Newly identified instruments**
    - ✓ **SIIS** in category B
    - ✓ **Skindex-Mini** in category B
    - ✓ **PADQLQ** in category B

**Table 2** New recommendations for use in future AE trials

PROMs	Category A		Category C	Recommendation
	Evidence for sufficient content validity (any level)	At least low quality evidence for sufficient internal consistency	High quality evidence for an insufficient measurement property	
IDQoL	✓	x	x	B
CDLQI	✓	x	x	B
CADIS	✓	x	x	B
<b>CADIS-SF</b>	✓	✓	x	<b>A</b>
DISABKIDS	✓	x	x	B
InToDermQoL	✓	x	x	B
PADQLQ	x	x	x	B
DLQI	✓	x	✓	C
<b>Skindex</b>	✓	✓	x	<b>A</b>
Skindex-Mini	x	x	x	B
SIIS	x	x	x	B
ABS-A	✓	x	x	B
ADerm-IS	✓	x	x	B

Note. New evidence is highlighted in blue.

Abbreviations. ABS-A, Atopic dermatitis burden scale for Adults; ADerm-IS, Atopic Dermatitis Impact Scale; AE, atopic eczema; CADIS, Childhood Atopic Dermatitis Impact Scale; CADIS-SF, Childhood Atopic Dermatitis Impact Scale—Short Form; CDLQI, Children's Dermatology Life Quality Index; DLQI, Dermatology Life Quality Index; IDQoL, Infants' Dermatitis Quality of Life Index; InToDermQoL, Infants and Toddlers Dermatology Quality of Life; PADQLQ, Pediatric Allergic Disease Quality of Life Questionnaire; SIIS, Scratch Intensity and Impact Scale.

### Literature

- <sup>1</sup>Langan SM, Mulick AR, Rutter CE, et al. Trends in eczema prevalence in children and adolescents: A Global Asthma Network Phase I Study. *Clinical & Experimental Allergy*. 2023;53(3):337-352. doi:10.1111/cea.14276
- <sup>2</sup>Blome C, Radtke MA, Eissing L, & Augustin M. Quality of life in patients with atopic dermatitis: disease burden, measurement, and treatment benefit. *American journal of clinical dermatology*. 2016;17:163-169. doi:10.1007/s40257-015-0171-3
- <sup>3</sup>Heini D, Prinsen CAC, Sach T, et al. Measurement properties of quality-of-life measurement instruments for infants, children and adolescents with eczema: a systematic review. *Br J Dermatol*. 2017;176(4):878-889. doi:10.1111/bjd.14966
- <sup>4</sup>Heini D, Prinsen CAC, Deckert S, et al. Measurement properties of adult quality-of-life measurement instruments for eczema: a systematic review. *Allergy*. 2016;71(3):358-370. doi:10.1111/all.12806
- <sup>5</sup>Gabes M, Tischer C, Apfelbacher C. Measurement properties of quality-of-life outcome measures for children and adults with eczema: an updated systematic review. *Pediatr Allergy Immunol*. 2020;31(1):66-77. doi:10.1111/pai.13120
- <sup>6</sup>Prinsen CAC, Mokkink LB, Bouter LM, et al. COSMIN guideline for systematic reviews of patient-reported outcome measures. *Qual Life Res*. 2018;27(5):1147-1157. doi:10.1007/s11136-018-1798-3