

Atopic Dermatitis: Quantifying Patient Suffering

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Learning Objectives

- Discuss suffering in atopic dermatitis
- Explore the options for scoring severity of atopic dermatitis
- Discuss importance of patient reported outcomes along with physician-based scoring

Atopic dermatitis



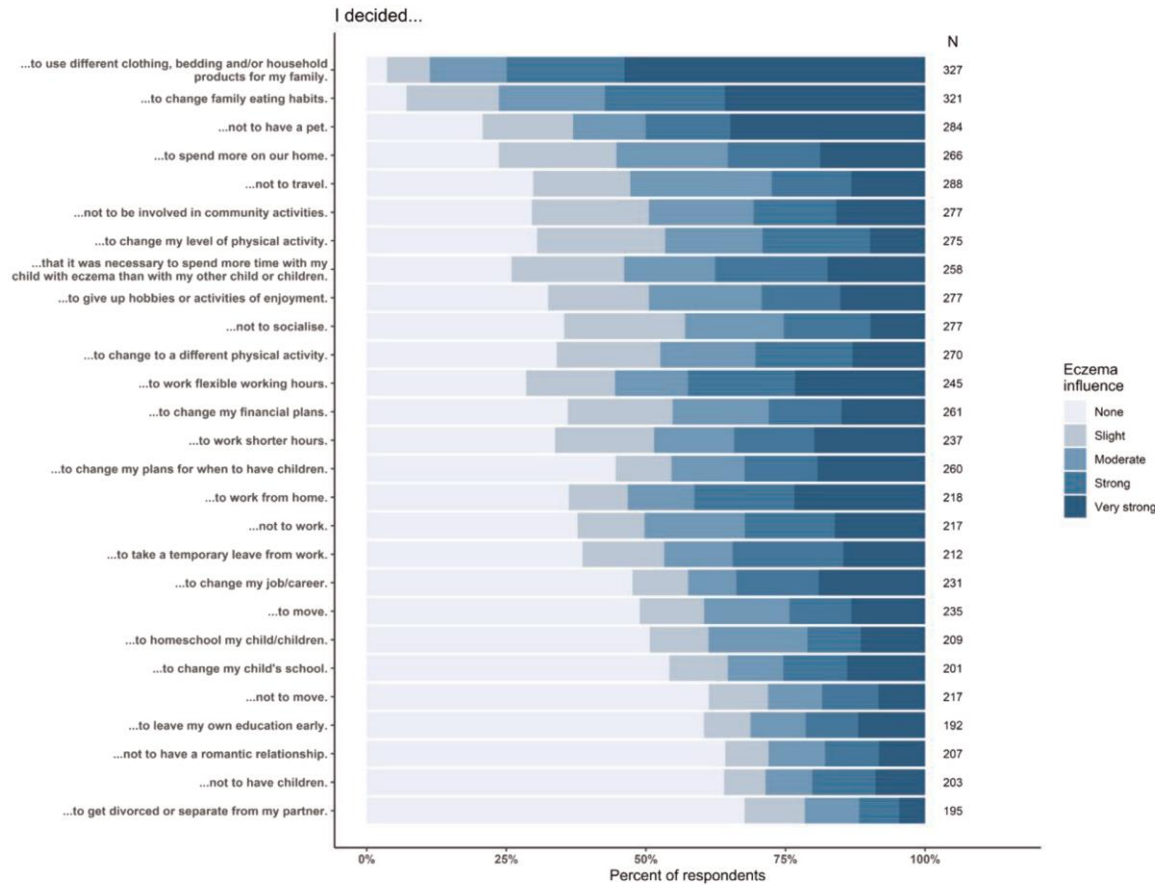
- Most common inflammatory skin disease in the US
 - ~7% of adults
 - 15% of children
- 20-30% of patients have moderate to severe disease

Diagnostic Criteria for Atopic Dermatitis			
Essential (must be present)	Important (supports diagnosis)	Associated (nonspecific but supports diagnosis)	Exclusionary (excludes diagnosis)
Pruritus	early age of onset	atypical vascular responses (eg, facial pallor, white dermographism, delayed blanch response)	scabies
Eczema (acute, subacute, chronic)	atopy	keratosis pilaris, pityriasis alba, hyperlinear palms, ichthyosis	seborrheic dermatitis
Morphology—typical or atypical? Age-specific patterns:	personal and/or family history	ocular, periorbital changes	contact dermatitis (irritant or allergic)
Infants and children: facial, neck, extensor involvement	immunoglobulin E reactivity	other regional findings (eg, perioral changes, periauricular lesions)	ichthyoses
Any age group: current or previous flexural lesions; sparing of groin and axillary regions	xerosis	perifollicular accentuation, lichenification, prurigo lesions	cutaneous T-cell lymphoma
History—chronic or relapsing?			psoriasis
			photosensitivity dermatoses
			immune deficiency diseases
J Allergy Clin Immunol, 139 (2017), pp. S49-S57			erythroderma of other

Patient burden and quality of life in atopic dermatitis in US adults

- A higher proportion of adults with AD reported having only fair or poor overall health (25.8% vs 15.8%) and being somewhat or very dissatisfied with life (16.7% vs 11.4%) compared with those without AD

Impact of childhood atopic dermatitis on life decisions for caregivers and families



For most decisions, the influence of eczema was strongly associated with the severity of the child's AD

The quantitative impact of atopic dermatitis on caregivers across multiple life domains

- In the work, family, and social life experiences domain, the burden of caregiving had cascading impacts on caregivers' relationships, including those with partners, other children, family, friends and even with the patients themselves.
- The time and attention given to the child with AD sometimes elicited feelings of jealousy among other children, and several caregivers cited caregiving for AD as a major factor leading to divorce.

SCORing Atopic Dermatitis (SCORAD)

- The SCORAD was developed in 1993 by the European Task Force on Atopic Dermatitis and is the most widely referenced AD scoring instrument in the literature

A = SPREAD.../100

B = INTENSITY.../18

Erythema : stage 1 / stage 2 / stage 3

Edema / papulation : stage 1 / stage 2 / stage 3

Excoriation : stage 1 / stage 2 / stage 3

Oozing / crusting : stage 1 / stage 2 / stage 3

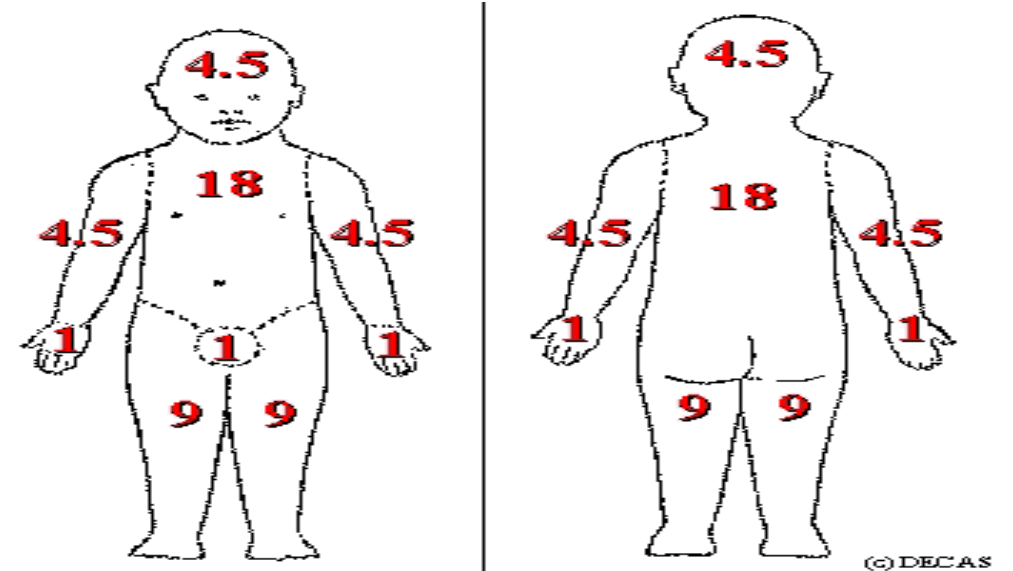
Lichenification : stage 1 / stage 2 / stage 3

C = SUBJECTIVE SYMPTOMS.../20

Pruritus

Insomnia

SCORAD calculation: $A/5 + 7*B/2 + C$

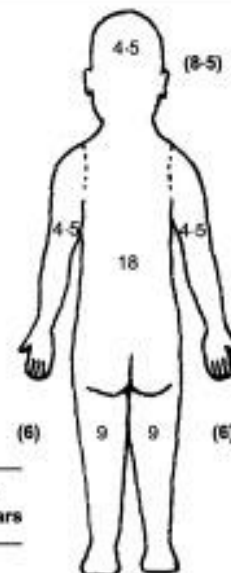
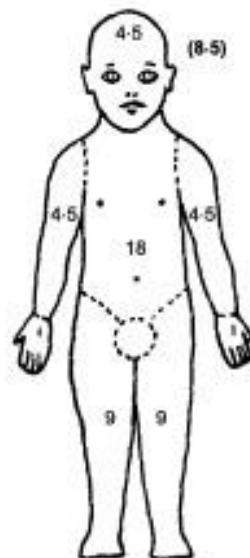


“Rule of 9”

SCORAD INDEX

EUROPEAN TASK FORCE ON ATOPIC DERMATITIS

Last Name First Name
Date of Birth: DD/MM/YY
Date of Visit:



Figures in parenthesis
for children under two years

A: EXTENT Please indicate the area involved

B: INTENSITY

C: SUBJECTIVE SYMPTOMS
PRURITUS + SLEEP LOSS

A/5 + 7B/2 + C

CRITERIA	INTENSITY
Erythema	
Oedema/Papulation	
Oozing/crust	
Excoriation	
Lichenification	
Dryness*	

* Dryness is evaluated
on uninvolved areas

MEANS OF CALCULATION

INTENSITY ITEMS
(average representative area)
0 = absence
1 = mild
2 = moderate
3 = severe

Visual analog scale
(average for the last
3 days or nights)

PRURITUS (0 to 10) 0 10
SLEEP LOSS (0 to 10)

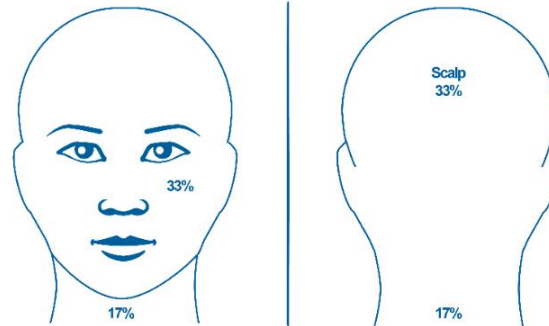
	Mild = 1	Moderate = 2	Severe = 3
Erythema (E)	 E=1 P=1 X=0 L=3 OC=0	 E=2 P=3 X=2 L=2 OC=2	 E=3 P=2 X=3 L=2 OC=2
Edema papulation (P)	 E=2 P=1 X=1 L=2 OC=0	 E=3 P=2 X=2 L=2 OC=1	 E=2 P=3 X=2 L=3 OC=1
Excoriations (X)	 E=2 P=1 X=1 L=2 OC=0	 E=2 P=2 X=2 L=2 OC=2	 E=3 P=2 X=3 L=3 OC=0
Lichenification (L)	 E=2 P=2 X=1 L=1 OC=0	 E=2 P=2 X=1 L=2 OC=0	 E=3 P=3 X=3 L=3 OC=1
Oozing/ crusting (OC)	 E=2 P=3 X=3 L=2 OC=1	 E=2 P=3 X=3 L=2 OC=2	 E=2 P=3 X=3 L=3 OC=3

EASI Score

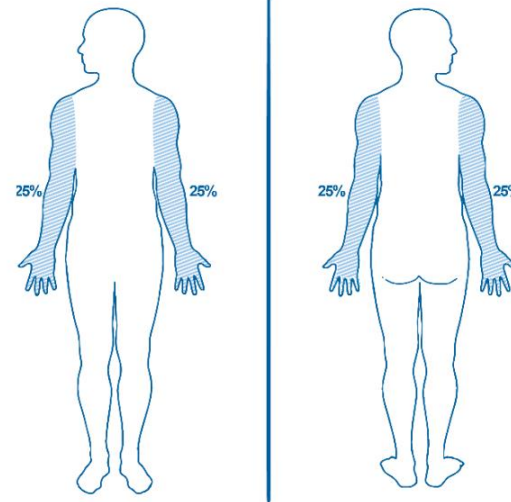
- The Eczema Area and Severity Index (EASI) was adapted from the Psoriasis Area and Severity Index in 1998.
- The EASI is calculated from summing 4 separate scores of the:
 - (1) head/neck
 - (2) upper extremities
 - (3) trunk
 - (4) lower extremities.
- For each of the 4 anatomical regions, the score formula is $S \times A \times M$.
- “S” is the congregate score from the severity of 4 signs: erythema, edema/papulation, excoriation, and lichenification, graded on a discrete scale from 0 to 3, where 0 = absent, 1 = mild, 2 = moderate, and 3 = severe, giving S a maximum of 12
- The final EASI score is calculated based on the sum of the scores from the 4 anatomical regions and yields a maximum of 72

Score each region from 0 to 100%

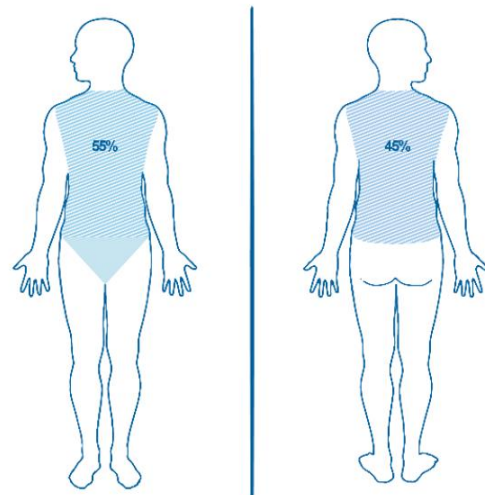
Head & neck



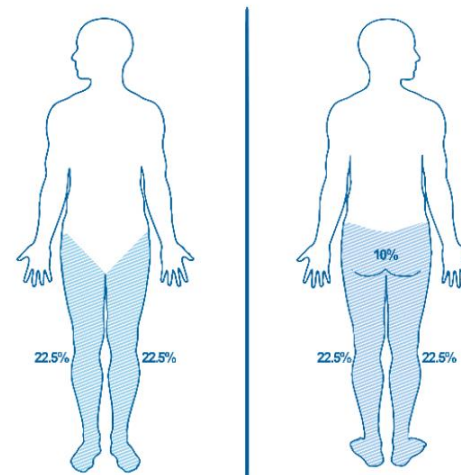
Upper extremities



Trunk



Lower extremities



Erythema



None = 0



Mild = 1

Faintly detectable, pink



Moderate = 2

Clearly distinguishable dull red



Severe = 3

Deep dark or fiery bright red

Edema/Papulation



None = 0



Mild = 1

Barely perceptible elevation



Moderate = 2

Clearly perceptible elevation
but not prominent



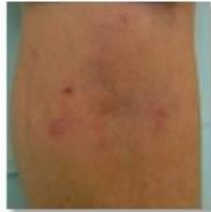
Severe = 3

Prominent elevation

Excoriation



None = 0



Mild = 1

Scant, superficial
excoriations



Moderate = 2

Many superficial and/or some
deeper excoriations



Severe = 3

Diffuse extensive superficial
and/or many deep excoriations

Lichenification



None = 0



Mild = 1

Slight thickening of the skin with
skin markings minimally
exaggerated



Moderate = 2

Clearly thickened skin with
exaggerated skin markings
and/or some prurigo nodules



Severe = 3

Prominent skin thickening with
exaggerated skin markings
creating deep furrows and/or
many prurigo nodules

Body region	Redness	Thickness	Scratching	Lichenification	Severity score	Area score	Multiplier	Region score
Head/Neck		+	+	+	=	x	X 0.1 (If ≤7 yrs, X 0.2)	=
Trunk		+	+	+	=	x	X 0.3	=
Upper Limbs		+	+	+	=	x	X 0.2	=
Lower Limbs		+	+	+	=	x	X 0.4 (If ≤7 yrs, X 0.3)	=
								= _____ (0-72)

Area of Involvement: Each body region has potentially 100% involvement. Score **0 to 6** based on the following table:

% involvement	0	1-9%	10 - 29%	30 - 49%	50 - 69%	70 - 89%	90 - 100%
Region score	0	1	2	3	4	5	6

Severity of Signs: Grade the severity of each sign on a scale of **0 to 3**:

0	None
1	Mild
2	Moderate
3	Severe

- ✓ Take an average of the severity across the involved area.
- ✓ Half points may be used e.g. 2.5.

Scoring table:

Body region	Erythema (0-3)	Edema/ Papulation (0-3)	Excoriation (0-3)	Lichenification (0-3)	Region score (0-6)	Multiplier	Score per body region
Head/neck	(+	+)	+)	X	X 0.2	
Trunk	(+	+)	+)	X	X 0.3	
Upper extremities	(+	+)	+)	X	X 0.2	
Lower extremities	(+	+)	+)	X	X 0.3	
<p><i>The final EASI score is the sum of the 4 region scores:</i></p> <p>_____</p> <p>(0-72)</p>							

Validated Investigator Global Assessment (vIGA)	
Score	Description
0 – Clear	No inflammatory signs of AD (erythema, induration/papulation, lichenification, nor oozing/ crusting). Postinflammatory hyperpigmentation and/or hypopigmentation may be present.
1 – Almost Clear	Barely perceptible erythema, barely perceptible induration/papulation, and/or minimal lichenification. No oozing or crusting.
2 – Mild	Slight but definite erythema (pink), slight but definite induration/papulation, and/or slight but definite lichenification. No oozing or crusting.
3 – Moderate	Clearly perceptible erythema (dull red), clearly perceptible induration/papulation, and/or clearly perceptible lichenification. Oozing and crusting may be present.
4 – Severe	Marked erythema (deep or bright red), marked induration/papulation, and/or marked lichenification. Disease is widespread in extent. Oozing or crusting may be present.

Comparing Intra and Inter -Rater Reliability with Scores (SCORAD, EASI, IGA)

- Among the 3 compared scales, the SCORAD had the highest inter-rater reliability, whereas the EASI had the highest intra-rater reliability.
- None of the 3 scoring methods showed a significant advantage over the other.

Patient Outcomes

- Harmonizing Outcome Measures for Eczema (HOME) initiative - AAAAI, ACAAI and Joint Task Force Atopic Dermatitis Guidelines

TABLE III. Some reported severity strata for measuring AD*

Perspective and domain	Instrument name/design	Total score range	No. of strata	Mild	Moderate	Severe	Recall time
Patient-rated AD severity	POEM	28	5†	3-7	8-16	17-24	7 d
Patient-rated itch	Peak Pruritus NRS‡	10	4	1	2	3	24 h
Patient-rated AD-related quality of life	DLQI ⁴⁸ CDLQI ⁴⁹	30	3§	0-5	6-10	11-30	7 d
Patient-rated AD-related quality of life§	DLQI ⁴⁸ CDLQI ⁴⁹	30	3§	0-5	6-10	11-30	7 d
Patient-rated AD control	RECAP	28	5 or 2				7 d
Patient-rated AD control	ADCT	24	2	¶	¶	¶	7 d

Patient Reported Outcomes: POEM

- The Patient-Oriented Eczema Measure (POEM) contains 7 questions, in domains related to **pruritus, sleep loss, bleeding, weeping/oozing, cracking, flaking, and dryness/roughness.**
- Indeed, PROs are advantageous because of their ease of administration, as well as their comprehensiveness in signs/symptoms.

Patient-Oriented Eczema Measure (POEM)

Patient-Oriented Eczema Measure

Please circle one response for each of the seven questions below. Young children should complete the questionnaire with the help of their parents. Please leave blank any questions you feel unable to answer.

1. Over the last week, on how many days has your/your child's skin been itchy because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

2. Over the last week, on how many nights has your/your child's sleep been disturbed because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

3. Over the last week, on how many days has your/your child's skin been bleeding because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

4. Over the last week, on how many days has your/your child's skin been weeping or oozing clear fluid because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

5. Over the last week, on how many days has your/your child's skin been cracked because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

6. Over the last week, on how many days has your/your child's skin been flaking off because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

7. Over the last week, on how many days has your/your child's skin felt dry or rough because of the eczema?

No Days 1-2 Days 3-4 Days 5-6 Days Every Day

Total Score (maximum 28) _____

• 0 to 2 = Clear or almost clear

• 3 to 7 = Mild eczema

• 8 to 16 = Moderate eczema

• 17 to 24 = Severe eczema

• 25 to 28 = Very severe eczema

Insurance requirements

- SCORAD >15
- EASI >16
- IGA >3
- POEM >8