Diagnosing and Assessing Atopic Dermatitis in Skin of Color

Understanding the Prevalence of Atopic Dermatitis in Skin of Color

While all races/ethnicities are affected by atopic dermatitis (AD), individuals with skin of color (SoC) experience a higher prevalence of disease and are more likely to have moderate-to-severe and/or treatment-resistant AD than individuals of European ethnicities. Health care providers should be aware of these trends to ensure accurate diagnosis and appropriate management for individuals with SoC.

AD prevalence varies globally, with higher rates in Africa and Oceania than in India and Europe

Higher prevalence of AD among Black children living in urban areas in the US and UK

Black individuals have a 3× higher likelihood, and Asian/Pacific Islander individuals have a 7× higher likelihood, of AD diagnosis compared with White individuals

Even after accounting for income, education, environment, and health insurance, individuals with SoC still have a greater likelihood of developing AD than White individuals

AAD 2014 Guidelines: Diagnostic Criteria for AD

Essential Features

- **Pruritus**
- **Eczema**
  - Acute, subacute, or chronic
  - Typical morphology and age-specific patterns[a]
  - Chronic or relapsing history

Important Features

- **Atopy**
  - Personal or family history
- **Early age at onset**
- **IgE reactivity**
- **Xerosis**

Associated Features

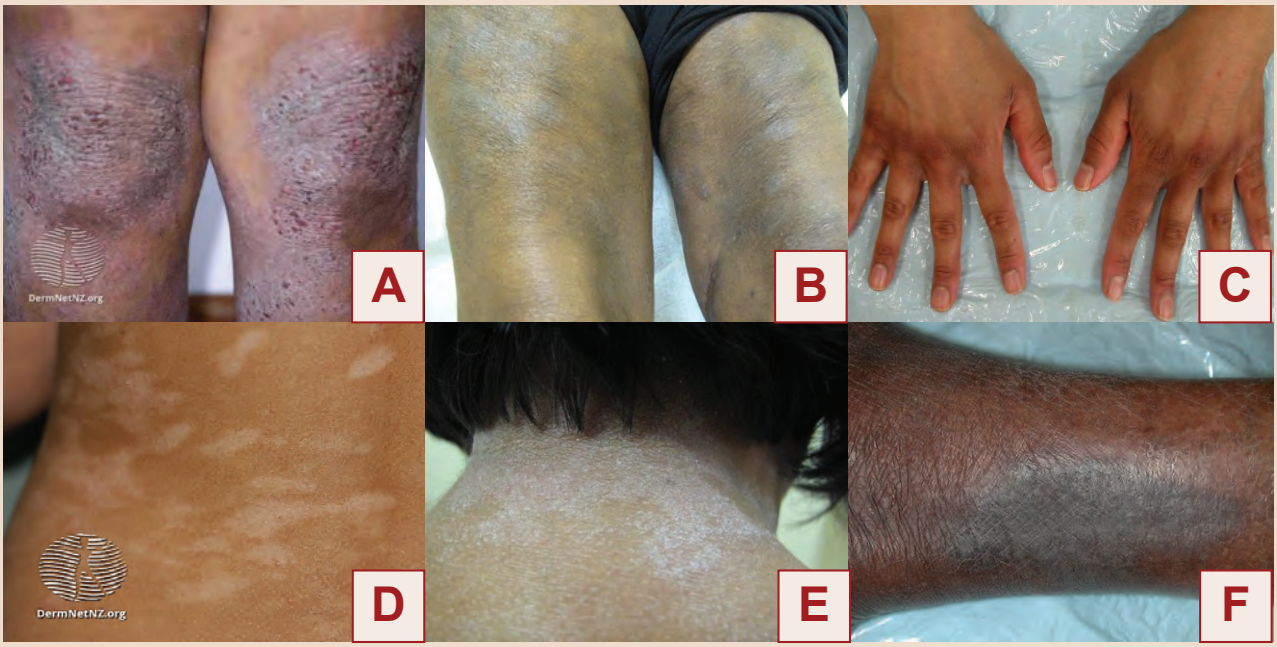
- **Atypical vascular responses**
  - Facial pallor
  - Dermographism
- **Keratosis pilaris, pityriasis alba, hyperlinear palms, or ichthyosis**
- **Ocular or periorbital changes**
- **Perifollicular accentuation, lichenification, or prurigo lesions**

[a]Patterns include (1) facial, neck, and extensor involvement in infants and children; (2) current or prior flexural lesions in any age group; and (3) sparing of groin and axillary regions.

The diagnostic criteria for AD are consistent among skin types, although some clinical features can present uniquely in SoC.

AD Presentation in SoC

- **Difficult-to-appreciate erythema in dark skin, including Black skin, brown skin, and other darker skin types:**
  - May present as a violaceous hue, an ashen gray, or darker brown color (A, B)
  - Presence of edema, warmth, or scale may help perceive underlying erythema
- **Post-inflammatory hyper- (C) or hypo-pigmentation (D)**
- **Lichen planus–like presentation observed exclusively in dark-skinned individuals (E, F)**
  - Affects extensor surfaces
  - Rapidly responds to treatment



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- **In addition to the above, Black/AA patients are more likely to have:**
  - Diffuse xerosis (G)
  - Extensor involvement (H)
  - Perifollicular accentuation (I)
  - Prurigo lesions (J)

Images A and D from DermNet New Zealand. Images B and E from Eczema in Skin of Color. Images C and F from National Eczema Society. Reproduced for educational purposes only.

- **Asian patients are more likely to present with:**
  - Clearer demarcation of lesions (K, L, M, N)
  - More pronounced scaling and lichenification (M, N)
  - More frequent extensor involvement
  - Erythrodermic AD (adolescents and adults, particularly those with a longer disease course)
  - Features associated with psoriasis, such as epidermal hyperplasia, elongated rete ridges, parakeratosis, and hypogranulosis

Image K provided courtesy of Anthony J. Mancini, MD. Image L from DermNet New Zealand. Images M and N from Noda S, et al. *J Allergy Clin Immunol.* 2015;136(5):1254-64. Reproduced for educational purposes only.

AD exhibits a broad spectrum of manifestations across diverse populations and skin tones, requiring nuanced diagnosis and individualized management approaches

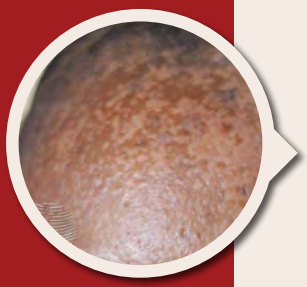
Notable variations in AD presentations across SoC populations include difficult-to-appreciate erythema in Black patients, lichen planus-like presentation in dark-skinned patients, and clearer lesion demarcation in Asian patients

Cultural competency in recognizing and diagnosing AD in individuals with diverse skin tones can foster equitable health care practices

Differential Diagnosis for AD in SoC

Scabies:

- Erythematous papules; subtle color variations on darker skin possible
- Presence of burrows; dermatoscopy aids visualization in darker skin
- Nocturnal worsening of pruritus



Seborrheic dermatitis:

- Individuals with darker skin may have scaly, hypopigmented macules and patches
- Children with darker skin may exhibit erythema, flaking, and hypopigmentation
- Arcuate or petal-like patches may be observed

Molluscum contagiosum:

- Umbilicated, smooth, flesh-colored, dome-shaped papules
- Clusters or linear pattern of lesions
- Lesions are often asymptomatic but can be pruritic

Contact dermatitis:

- Localized rash or hyperpigmentation in areas of allergen contact
- History of exposure to potential irritants or allergens, such as certain metals, chemicals, or plants
- Specific triggers identified through patch testing

Ichthyosis vulgaris:

- AD present in 50% of patients with ichthyosis vulgaris
- Typically present at birth or develops in childhood
- Often (but not always) mild in presentation
- Usually less pruritic than AD

Psoriasis:

- Well-demarcated, thick, and scaly plaques with a silvery-white appearance
- Generally less itching and pain than with AD
- Nail changes: pitting, onycholysis, and thickening frequently seen

Evaluating AD Extent and Severity in SoC

Use adapted scales for accurate assessment:

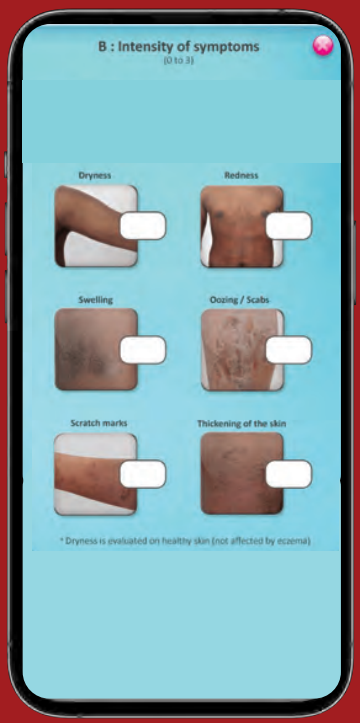
- Existing objective scoring systems (eg, EASI, SCORAD) may underestimate the severity of AD in patients with SoC due to challenges in assessing erythema as a contributing factor
- Adapted scales, such as the PO-SCORAD, demonstrate a strong correlation with the traditional SCORAD when applied to patients with SoC, enabling more accurate assessment

Incorporate patient-reported outcomes (PROs):

- Enhance the assessment of AD in patients with SoC by incorporating PROs, such as the Patient-Oriented Eczema Measure (POEM) score
- PROs such as the POEM score can capture the subjective experience and provide valuable insights into the impact of AD on patients with SoC

Monitor for changes in pigmentationthat can complicate skin assessment:

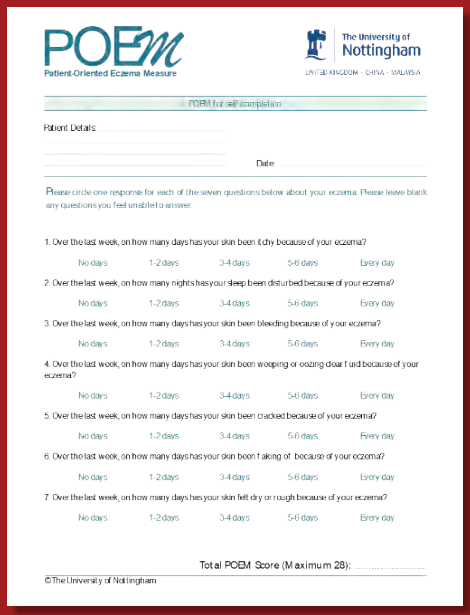
- Be vigilant for post-inflammatory hyper-/hypopigmentation, as these pigmentation changes can influence the evaluation of AD severity in patients with SoC
- Additionally, be aware of topical corticosteroid-induced hypopigmentation, which can occur in response to treatment and further complicate the assessment of skin condition



SCAN FOR APP

or download PO-SCORAD app here: www.poscorad.com

Screenshot from the PO-SCORAD Version 5.0 app.



POEM
Patient-Oriented Eczema Measure

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

POEM (self-completion)

Patient Details

Date

Please circle one response for each of the seven questions below about your eczema. Please leave blank any questions you feel unable to answer

1. Over the last week, on how many days has your skin been itchy because of your 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 sleep been disturbed because of your 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 skin been bleeding because of your 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 skin been weeping or oozing clear fluid because of your 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 skin been cracked because of your 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 skin been flaking of because of your 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 skin felt dry or rough because of your eczema?
No days | 1-2 days | 3-4 days | 5-6 days | Every day

Total POEM Score (Maximum 28): .....

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SCAN TO DOWNLOAD

Or access POEM Questionnaire here: www.nottingham.ac.uk/research/groups/cebd/resources/poem.aspx

POEM questionnaire for use in pediatric and adult patients with AD.

Abbreviations:

AA: African American
AAD: American Academy of Dermatology
AD: atopic dermatitis
EASI: Eczema Area and Severity Index
IgE: immunglobulin E
POEM: Patient Oriented Eczema Measure
PO-SCORAD: Patient-Oriented SCORAD
PRO: patient-reported outcome
SCORAD: SCORing Atopic Dermatitis
SoC: skin of color

References

Ben-Gashir MA, et al. *Br J Dermatol.* 2002;147(5):920-925.
Brown Skin Matters. https://brownskinmatters.com.
Charman CR, et al. *Arch Dermatol.* 2004;140(12):1513-1519.
Davis CM, et al. *J. Allergy Clin. Immunol. Pract.* 2023;11:1376-1383.
DermNet New Zealand. https://dermnetnz.org/.
Eczema in Skin of Color. https://eczemainskinofcolor.org/.
Faye O, et al. *J Eur Acad Dermatol Venereol.* 2020;34(4):795-799.
Fischer AH, et al. *J Am Acad Dermatol.* 2017;77(6):1060-1067.
Fu T, et al. *Pediatr Dermatol.* 2013;31(1):21-26.
Janumpally SR, et al. *Arch Dermatol.* 2002;138(5):634-7.
Jothishankar B, et al. *Clin Dermatol.* 2019;37(5):418-429.
Julián-Gónzalez RE, et al. *Pediatr Dermatol.* 2012;29(5):580-583.
National Eczema Society. https://eczema.org/.
Kaufman BP, et al. *Exp Dermatol.* 2018;27(4):340–357.
Odhiambo JA, et al. *J Allergy Clin Immunol.* 2009;124(6):1251-1258.e23.
Sachdeva M, et al. *Drugs Context.* 2022;11:2021-12-1.
Sangha AM. *J Clin Aesthet Dermatol.* 2021;14(3 Suppl 1):S20-S22.
Shaw TE, et al. *J Invest Dermatol*. 2011;131(1):67-73.
Silverberg JI, et al. *J Invest Dermatol.* 2013;133(7):1752-1759.
Wan J, et al. *J Invest Dermatol*. 2019;139(9):1906-1913.e1.
Wegienka G, et al. *Clin Exp Allergy.* 2012;42(6):909-917.
Weiland SK, et al. *Occup Environ Med.* 2004;61(7):609-615.
Williams HC, et al. *J Am Acad Dermatol.* 1995;32(2 Pt 1):212-217.