A CME/CE-Certified Supplement to
Dermatology News™

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Estimated Time to Complete Activity: 0.25 hours

Participants should read the activity information, review the activity in its entirety, and complete the online post-test and evaluation. Upon completing this activity as designed and achieving a passing score on the post-test, you will be directed to a Web page that will allow you to receive your certificate of credit via e-mail or you may print it out at that time.

The online post-test and evaluation can be accessed at https://tinyurl.com/ADInfoED

Inquiries about continuing medical education (CME) accreditation may be directed to Postgraduate Institute for Medicine (PIM) at www.pimed.com or (303) 799-1930.

Joint Provider Statement

In support of improving patient care, this activity has been planned and implemented by Postgraduate Institute for Medicine and Global Academy for Medical Education. Postgraduate Institute for Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

Physician Continuing Medical Education

Postgraduate Institute for Medicine designates this enduring material for a maximum of 0.25 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Continuing Nursing Education: The maximum number of hours awarded for this Continuing Nursing Education activity is 0.2 contact hours.

Target Audience

This activity is designed for dermatologists, pediatricians, pediatric dermatologists, allergists, physician assistants, nurse practitioners, and nurses in dermatology and allergy actively treating patients with atopic dermatitis (AD).

Educational Needs

There is a wide variation in knowledge, competence, and practice among clinicians regarding the management of AD, especially in light of recent scientific advances and newly available therapies. To provide optimal care, specialists need foundational education regarding the etiology and pathophysiology of AD. To accurately assess their patients and decide on a course of treatment, they need awareness of available validated tools. They would further benefit from case-based AD education to facilitate application of the foundational learning into clinical practice.

Learning Objectives

At the conclusion of this program, participants should be better able to:

- Describe the current theories of the pathophysiology of AD
- Identify and apply the diagnostic criteria for AD
- Employ strategies to manage patients with mild-to-moderate and moderate-to-severe AD

This activity is jointly provided by:

This activity is supported by independent educational grants from Pfizer Inc. and Sanofi Genzyme and Regeneron Pharmaceuticals.

A Current Practice Snapshot of Atopic Dermatitis Management:
Where We Are and Where We Need to Be

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Introduction

The evolving understanding of the pathophysiology of atopic dermatitis (AD) has led to the recent approval of new therapies with novel mechanisms of action, including crisaborole, a topical agent for mild-to-moderate AD, and dupilumab, a systemic agent for moderate-to-severe disease. Despite these advances, however, many clinicians may lack awareness of how to accurately assess disease severity and, subsequently, how to design an appropriate therapeutic strategy for the individual patient when the disease progresses. As an expert panel of the International Eczema Council (IEC) recently observed, "[G]uidelines for decision making about advancement to systemic therapy are lacking."[1] To address these gaps in knowledge and practice—and to explore "where we are" with regard to contemporary AD management—a multicomponent CME-certified program was launched in the fall of 2018.

CME/CE-Certified Program

5 live national dermatology conferences

MedQuiz

Participants answer questions

Participants rate their degree of confidence before submitting each answer

A brief scientific explanation of each answer is shown, reinforcing correct responses or explaining incorrect ones

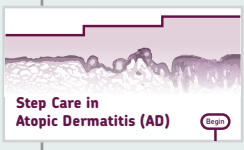
Scores are calculated on the basis of accuracy and degree of confidence and displayed on a leader board

Questions are also made available online to a broader audience of dermatology clinicians (https://tinyurl.com/ADQuiz18)

Online immersive infographic educational modules using learner engagement strategies (www.globalacademycme.com/node/5579)

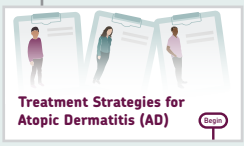
Module 1: Current Theories of the Pathophysiology of AD

Illustrates the current science of AD pathophysiology and defines levels of AD severity



Module 2: Step Care in AD

Explores the tools available for patient assessment



Module 3: Treatment Strategies for AD

Presents case challenges in managing patients of different ages and with different degrees of AD symptomatology

This supplement outlines the interim findings from pretest and post-test questions of the above educational activities and highlights the following:

Where we are in current practice for atopic dermatitis management

Data from key questions asked during the activities

Where we need to be for optimal atopic dermatitis management

Information on what clinicians should know and how they should apply that knowledge

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Faculty

Linda F. Stein Gold, MD, ***Speaker's Bureau:*** Allergan, Celgene, Galderma, LEO, Novartis, Pfizer, Valeant; ***Consultant:*** AbbVie, Allergan, Celgene, Galderma, LEO, Medimetriks, Novartis, Pfizer, Promius, Valeant; ***Fees for Non-CME Services Received Directly from a Commercial Interest or Its Agent:*** AbbVie, Allergan, Celgene, Dermira, Galderma, La Roche-Posay, LEO, Medimetriks, Novan, Novartis, Pfizer, Promius, Sebela, Valeant; ***Contracted Research:*** Allergan, Aqua, Dermira, Galderma, LEO, Pfizer, Valeant.

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Moise L. Levy, MD, ***Consultant:*** Castle Creek Pharmaceuticals; ***Contracted Research:*** Amicus.

Staff and Planning Committee Members:
The PIM planners and managers have nothing to disclose. The Global Academy for Medical Education planners and managers have nothing to disclose.

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Exploring Mechanisms of Disease

Questions presented during the interactive modules and MedQuiz activity focused on learners' general understanding and knowledge of specific aspects of AD pathology.

Where we are

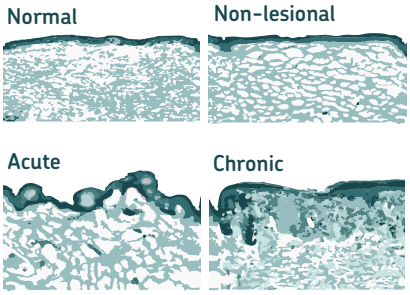
50% of respondents did not know that **irritants**, such as cigarette smoke, are an **undisputed trigger for AD.**

4 in 10 incorrectly believed that hygiene habits, such as regular bathing, were involved.

Where we need to be

The current model of AD posits a multifactorial pathogenesis involving both an "outside-in" and an "inside-out" process.[2] In this view, symptoms result from a combination of defects in the skin barrier that are exacerbated by dysregulated immune activity.[3] Understanding this principle is important, since treatment for AD in the earlier stages involves topical management (including use of skin hygiene, emollients, and therapeutic lotions or ointments), while in the later stages a systemic approach may be needed to address the underlying inflammatory and allergic processes.[4] Non-lesional AD has a greater response to irritants, including cigarette smoke.

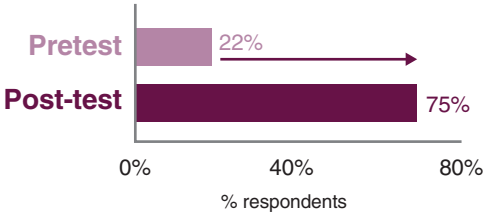
AD Is a Progressive Disease Involving Defects in the Skin Barrier



Where we are

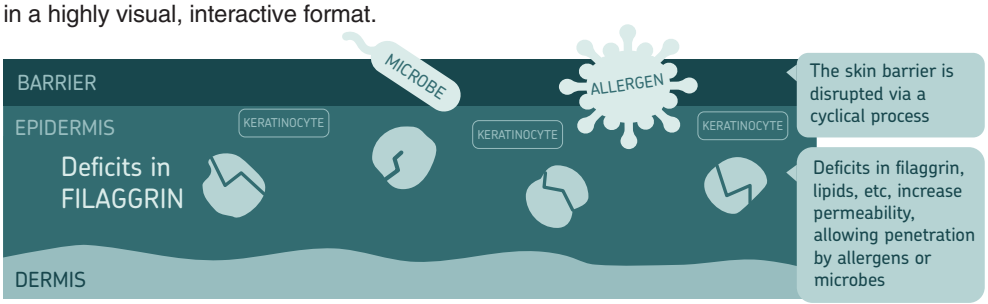
Nearly 76% of learners reported that their understanding of the **pathophysiological mechanisms** contributing to the barrier defect in AD was only "fair" or "poor."

When asked about which factors contribute to the **skin barrier defect** seen in AD, the proportion of learners who identified the correct answer **(deficits in filaggrin)** rose from about 22% (pretest) to nearly 75% after exposure to the education.

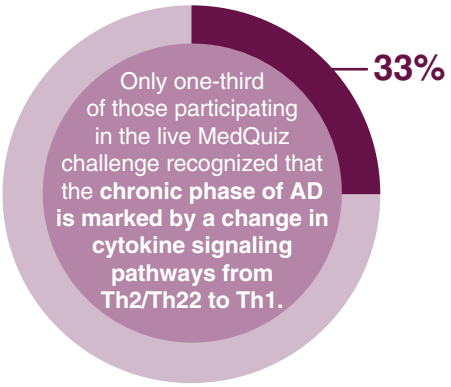


Where we need to be

The above findings (and other similar outcomes results, not reported here) support the need for further education on AD mechanisms and the value of presenting such material in a highly visual, interactive format.

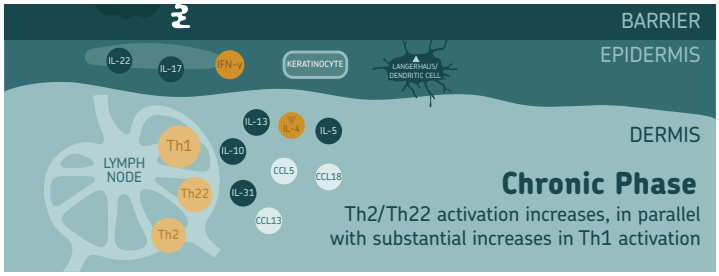


Where we are



Where we need to be

AD can progress through 3 phases of severity—non-lesional, acute, and chronic. The increase in severity reflects changes in the underlying immune mechanisms and dictates treatment choices.[5]

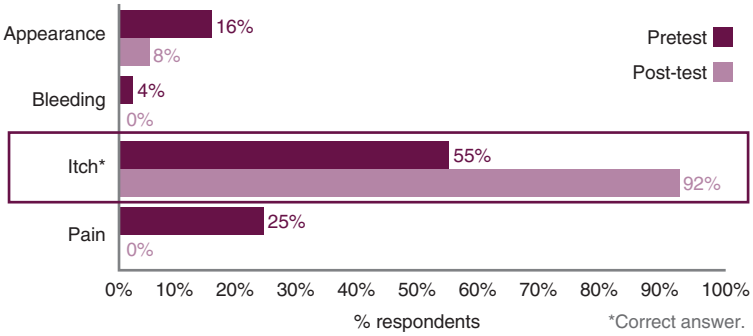


Current Concepts in Assessing AD

Learners' understanding of symptoms and comorbidities of AD was determined, along with their knowledge of tools that can be used to make such assessments.

Where we are

Which of the following **symptoms** do patients with AD **typically report is the most bothersome**?



Where we need to be

The clinical presentation of AD involves the following:

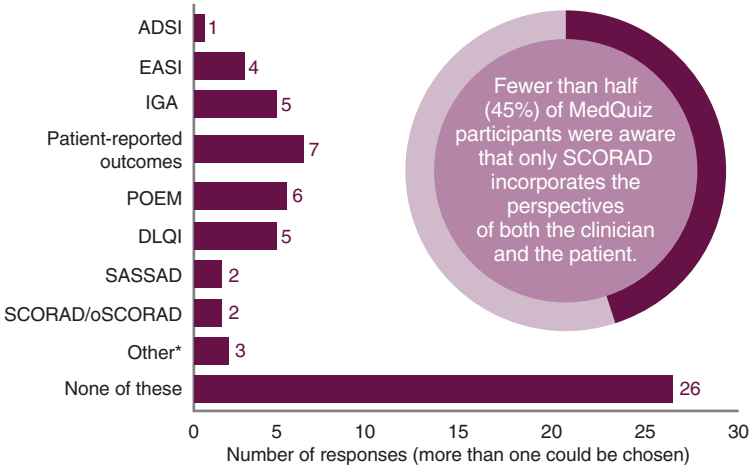
Clinical Presentation:
- Pruritus
- Eczema
- Pain, bleeding, or oozing

Comorbidities:
- Sleep disturbance
- Depression
- Psychosocial challenges

Awareness of pruritus is important because treatment must be designed to address this aspect of disease to optimize outcomes and to improve patients' satisfaction with their therapy.

Where we are

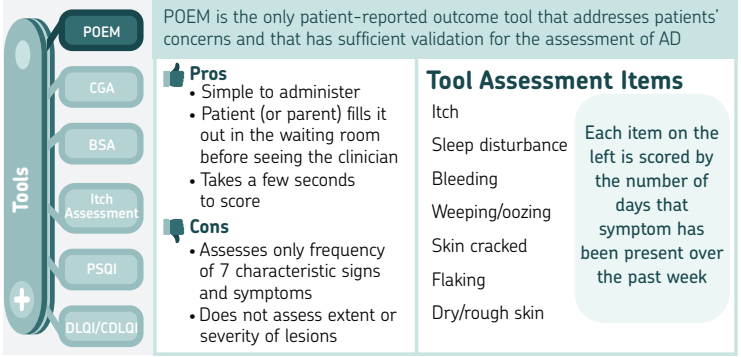
In the interactive modules, the majority of learners reported that they did not use any of the listed **assessment tools** when **clinically evaluating patients** with AD.



*Other = Body Surface Area (BSA); Clinician's Global Assessment of Severity (CGAS); Pittsburgh Sleep Quality Index (PSQI). **ADSI**, Atopic Dermatitis Severity Index; **EASI**, Eczema Area and Severity Index; **IGA**, Investigator Global Assessment; **POEM**, Patient-Oriented Eczema Measure; **SASSAD**, Six Area, Six Sign Atopic Dermatitis; **SCORAD/oSCORAD,** (Objective) Scoring Atopic Dermatitis.

Where we need to be

Although most patients with AD can be managed effectively with topical agents, a significant number will require a more aggressive approach.[1] The decision to step up to systemic therapy should be made holistically, involving a mix of tools to assess both disease severity and the patient's overall quality of life. Many tools exist for evaluating these parameters, but most are intended for use in evaluating results of trials and may not be practical in the clinic. No "gold standard" tool has been identified, and only 3 have been adequately validated: EASI, SCORAD, and POEM.[6-8] Experts recommend applying a mix of tools and strategies for assessment.



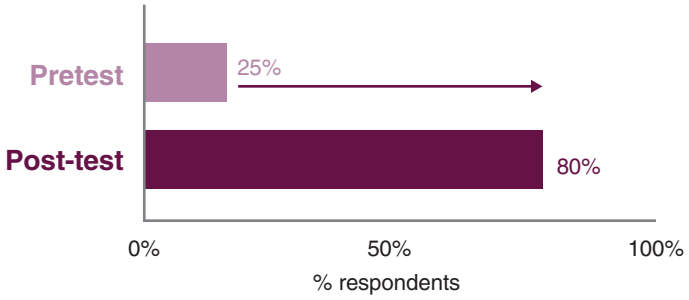
CDLQI, Children's Dermatology Life Quality Index; **DLQI**, Dermatology Life Quality Index; **PSQI**, Pittsburgh Sleep Quality Index.

Current Concepts in Treating AD

Learners were assessed on their level of understanding of the mechanisms of action of current AD therapies as a way to emphasize the importance of selecting agents that target the pathophysiological disruptions that produce symptoms.

Where we are

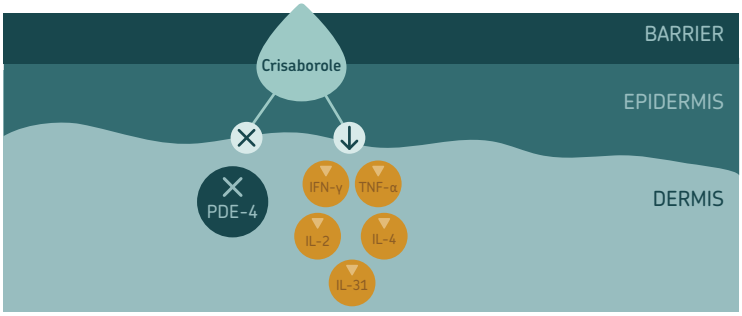
Asked which agent **targets phosphodiesterase 4 (PDE-4)** activity, only about 25% of respondents on the pretest correctly identified **crisaborole**; after the education, however, more than 80% answered correctly.



Where we need to be

Understanding the mechanism of action of available agents for managing AD will help clinicians identify appropriate treatment choices.

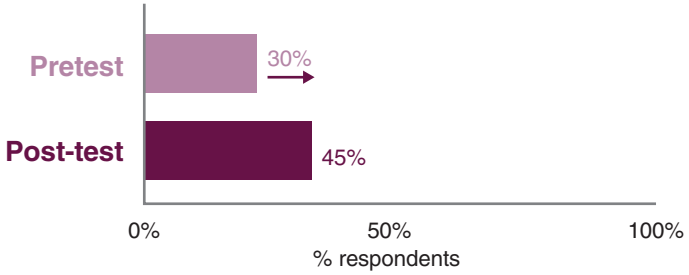
Crisaborole inhibits PDE-4 activity, resulting in a reduction in cytokine expression, including IFN-γ, TNF-α, IL-2, IL-4, and IL-31.[9]



IFN, interferon; **IL**, interleukin; **TNF**, tumor necrosis factor.

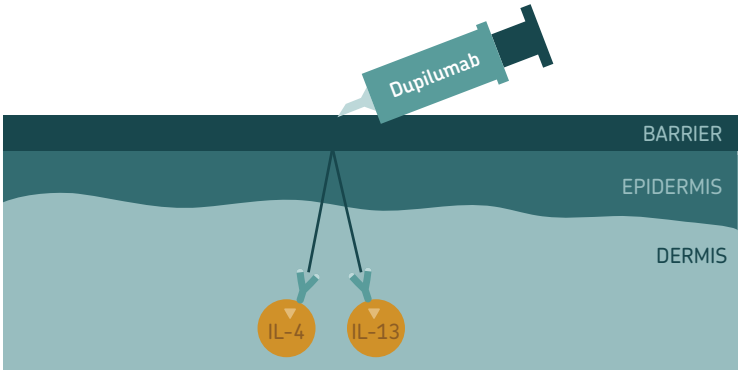
Where we are

The proportion of learners who knew that **dupilumab reduces inflammation in AD by inhibiting Th2 cytokines** also rose, from 30% on the pretest to 45% on the post-test, but such results, while encouraging, indicate there is still room to increase awareness about drug mechanisms.



Where we need to be

Dupilumab reduces inflammation in AD by inhibiting Th2 cytokines.



Summary

Atopic dermatitis is a complex disease that can arise at any age, including in very young patients, and that can persist and progress over the course of many years. Most cases are mild-to-moderate in severity and can be managed appropriately and effectively in the primary care setting. However, the underlying pathology of AD can change over time to involve different immune pathways, resulting in more severe symptoms and necessitating a reevaluation of the patient to determine whether referral for more aggressive treatment is needed. Specialists are in a position to offer stepped-up therapy that includes a systemic approach when appropriate. Education that explicates the disease process—and that challenges learners to select optimal treatment for an individual—can be effective, but the range of learner answers submitted by participants in a recent CME program series suggests that more effort is needed to close the educational gaps and improve therapeutic outcomes for patients with AD.

References

1. Simpson EL, Bruin-Weller M, Flohr C, et al. When does atopic dermatitis warrant systemic therapy? Recommendations from an expert panel of the International Eczema Council. J Am Acad Dermatol. 2017;77(4):623-633.
2. Leung DYM, Guttman-Yassky E. Deciphering the complexities of atopic dermatitis: shifting paradigms in treatment approaches. J Allergy Clin Immunol. 2014;134(4):769-779.
3. Schneider L, Tilles S, Lio P, et al. Atopic dermatitis: a practice parameter update 2012. J Allergy Clin Immunol. 2013;131(2):295-299.e1-e27.
4. Eichenfield LF, Boguniewicz M, Simpson EL, et al. Translating atopic dermatitis management guidelines into practice for primary care providers. Pediatrics. 2015;136(3):554-565.
5. Boguniewicz M, Fonacier L, Guttman-Yassky E, Ong PY, Silverberg J, Farrar JR. Atopic dermatitis yardstick: practical recommendations for an evolving therapeutic landscape. Ann Allergy Asthma Immunol. 2018;120(1):10-22.e2.
6. Bershad SV. In the clinic: atopic dermatitis (eczema). Ann Intern Med. 2011;155(9):ITC5-1-15.
7. Eichenfield LF, Tom WL, Chamlin SL, et al. Guidelines of care for the management of atopic dermatitis: section 1. Diagnosis and assessment of atopic dermatitis. J Am Acad Dermatol. 2014;70(2):338-351.
8. Boguniewicz M. Biologic therapy for atopic dermatitis: moving beyond the practice parameter and guidelines. J Allergy Clin Immunol Pract. 2017;5(6):1477-1487.
9. Ahluwalia J, Udkoff J, Waldman A, Borok J, Eichenfield LF. Phosphodiesterase 4 inhibitor therapies for atopic dermatitis: progress and outlook. Drugs. 2017;77(13):1389-1397.