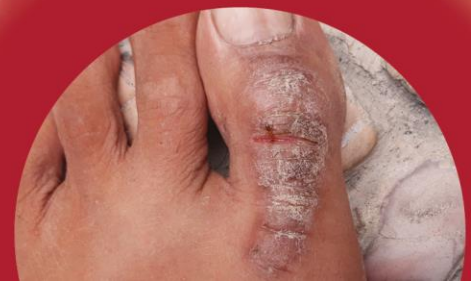
National Jewish Health®

Breathing Science is Life®

Final Outcomes Summary
Online Enduring
2/28/25 – 2/28/26
Grant ID: 2024-ME-000021

ATOPIC DERMATITIS

A COMPREHENSIVE REVIEW of Pathophysiology, Current Management and Future Directions



This activity is supported by an independent medical education grant from Dermavant.

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Executive Summary

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Program Overview

Atopic dermatitis (AD) is the most prevalent chronic inflammatory skin condition worldwide. With several newly available and emerging treatment options for atopic dermatitis, healthcare providers need to be up to date on the latest information and how it impacts patient care. This online enduring activity features an allergist and dermatologist considered AD experts discussing best practices for diagnosis and management of AD. The activity includes whiteboard animations illustrating AD pathophysiology and treatment targets, and a downloadable clinical reference aid outlining current and emerging treatment options for AD.

Target Audience

Allergists/immunologists, dermatologists, and advanced practice providers who treat patients with atopic dermatitis.

Learning Objectives

1. Demonstrate knowledge of AD pathophysiology relating to immune dysregulation, genetic factors, and skin barrier dysfunction.
2. Develop diagnostic approaches that differentiate AD clinical presentations from other dermatological conditions and in patients with skin of color (SOC).
3. Evaluate the efficacy of emerging AD treatments.

Activity Format and Dates

Enduring activity on Epocrates
2/28/25 - 2/28/26
https://www.epocrates.com/cme/program/EP88FWCGBY?skipAuth=true

Accreditation

NJH is accredited with commendation by the Accreditation Council for Continuing Medical Education (ACCME). NJH designates this enduring material for a maximum of 1.0 *AMA PRA Category 1 Credits™*.

Outcomes Levels and Methodology

Moore's Levels 1-4

- Level 1 (Participation): Learner demographic data
- Level 2 (Satisfaction): Post-activity evaluation
- Level 3 (Knowledge): Pre- and post-test comparison
- Level 4 (Competence): Pre- and post-test comparison, post-activity evaluation

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Program Features
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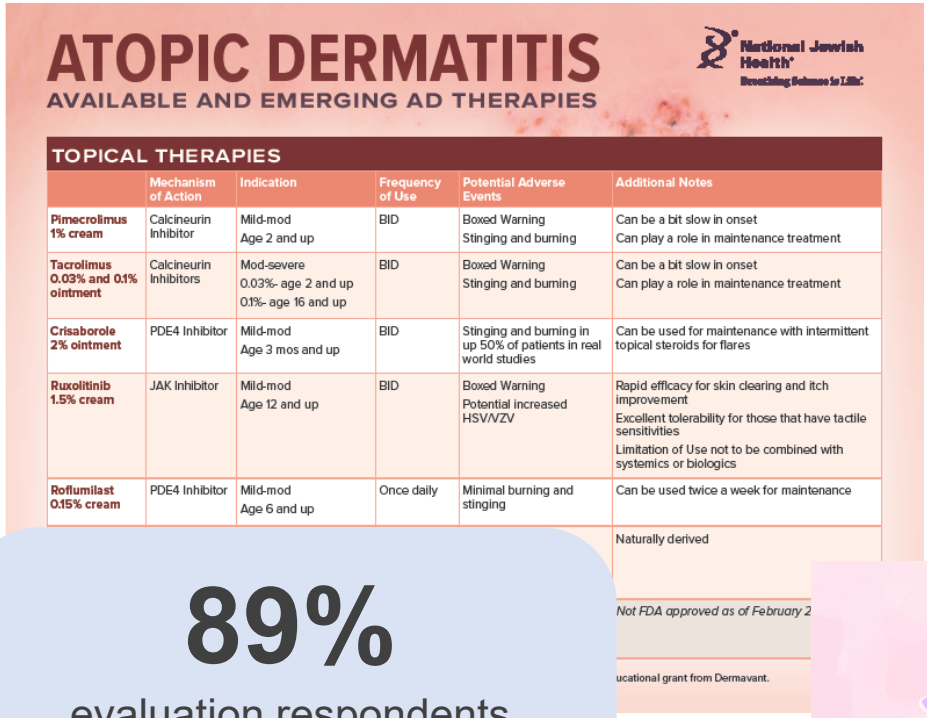
Clinical Reference Aid



ATOPIC DERMATITIS

AVAILABLE AND EMERGING AD THERAPIES

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TOPICAL THERAPIES

	Mechanism of Action	Indication	Frequency of Use	Potential Adverse Events	Additional Notes
Pimecrolimus 1% cream	Calcineurin Inhibitor	Mild-mod Age 2 and up	BID	Boxed Warning Stinging and burning	Can be a bit slow in onset Can play a role in maintenance treatment
Tacrolimus 0.03% and 0.1% ointment	Calcineurin Inhibitors	Mod-severe 0.03%- age 2 and up 0.1%- age 16 and up	BID	Boxed Warning Stinging and burning	Can be a bit slow in onset Can play a role in maintenance treatment
Crisaborole 2% ointment	PDE4 Inhibitor	Mild-mod Age 3 mos and up	BID	Stinging and burning in up 50% of patients in real world studies	Can be used for maintenance with intermittent topical steroids for flares
Ruxolitinib 1.5% cream	JAK Inhibitor	Mild-mod Age 12 and up	BID	Boxed Warning Potential increased HSV/VZV	Rapid efficacy for skin clearing and itch improvement Excellent tolerability for those that have tactile sensitivities Limitation of Use not to be combined with systemics or biologics
Roflumilast 0.15% cream	PDE4 Inhibitor	Mild-mod Age 6 and up	Once daily	Minimal burning and stinging	Can be used twice a week for maintenance
					Naturally derived

Not FDA approved as of February 2

ucational grant from Dermavant.

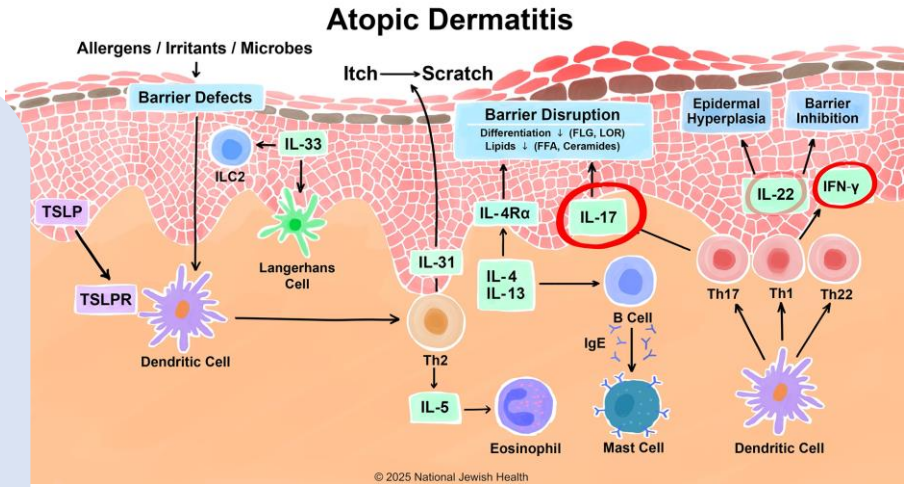
89%

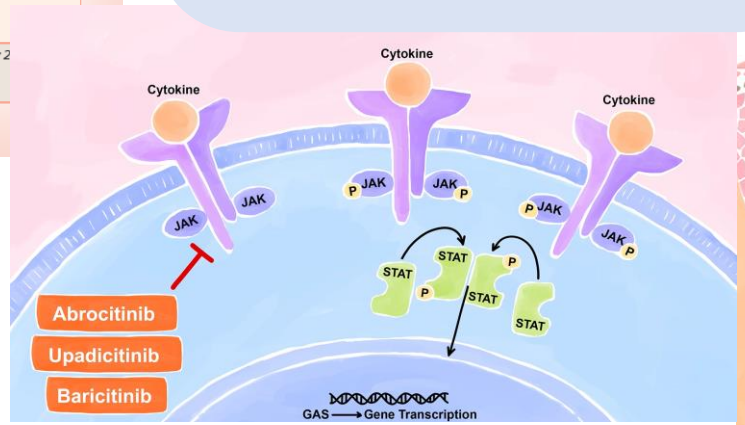
evaluation respondents reported they were likely to use the clinical reference aid in their practice (n=1687)

Whiteboard Animation

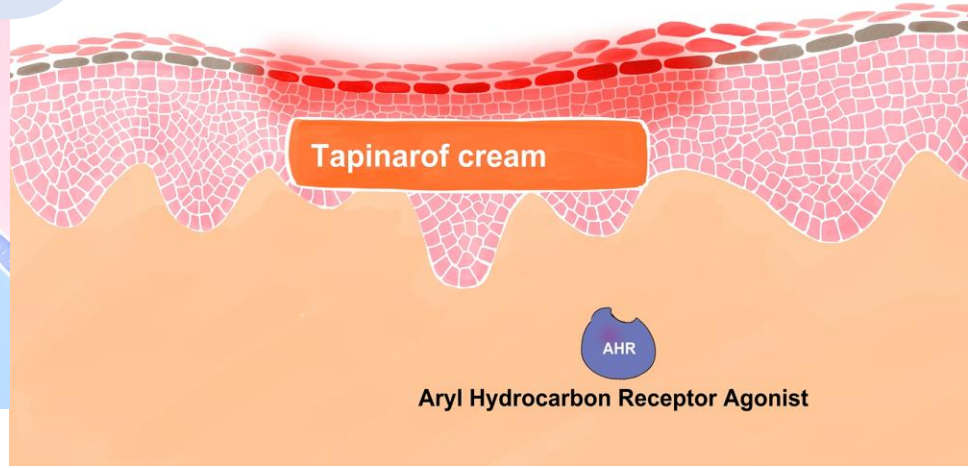
91%

evaluation respondents reported the animations increased their understanding of pathophysiology and treatment (n=1687)





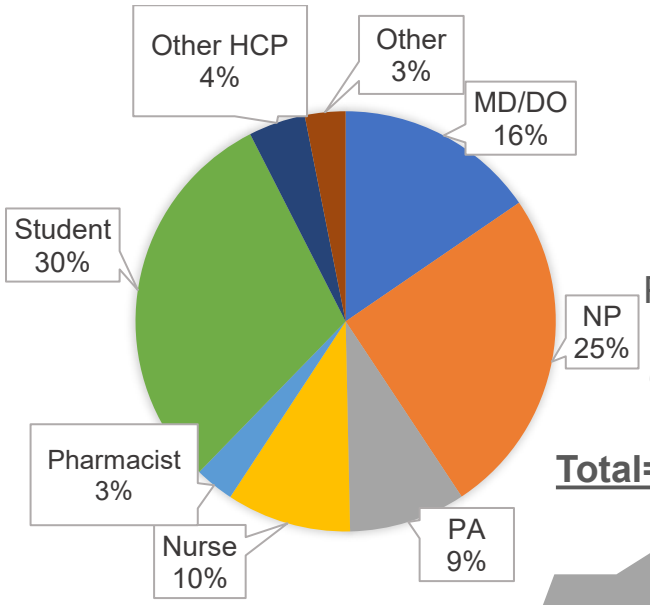
Other topical therapies include:



Educational Impact Summary (Quantitative)

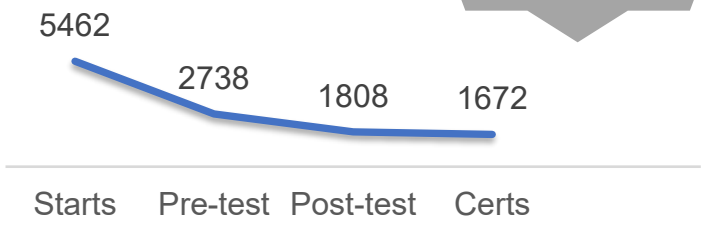
Final Outcomes Summary

Participation

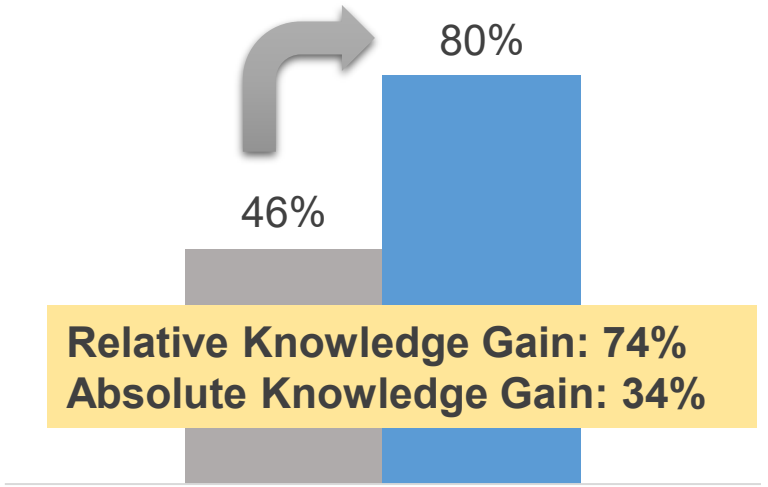


MD/DO=844
NP=1379
PA=490
Nurse=524
Pharmacist=165
Student=1651
Other HCP=239
Other=171
Total=5463 Learners

450,288 Potential patient visits impacted

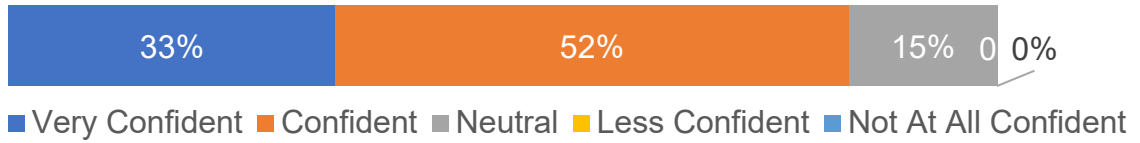


Learning Gains Across Objectives



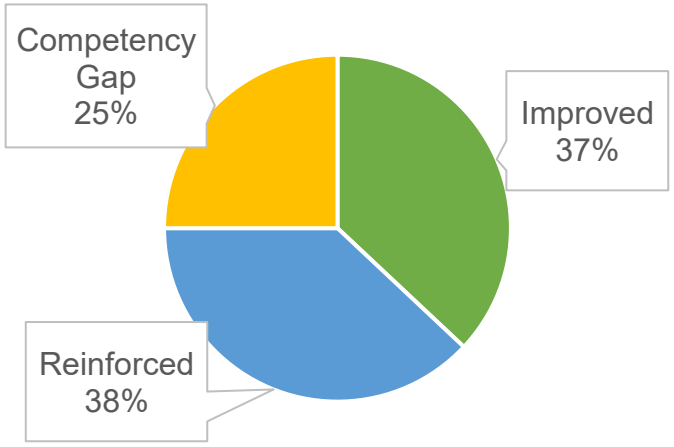
Relative Knowledge Gain: 74%
Absolute Knowledge Gain: 34%

Confidence @ Post-Test



Persistent Learning Gaps/Needs

25% of learners were unable to develop diagnostic approaches that differentiate AD from other conditions at post-test



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Educational Impact Summary (Qualitative)

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Patient Impact

1687
Evaluation respondents

Who have
9381
atopic dermatitis patient visits weekly

Which translates to
450,288
patient visits potentially impacted annually*

**Note: represents patient visits, not unique patients.*

Educational Impact

Knowledge and Competence Change by Learning Objective (n=424)

- ✓ **97%** demonstrating knowledge of AD pathophysiology relating to immune dysregulation, genetic factors, and skin barrier dysfunction
- ✓ **38%** relative knowledge gain seen from learners in developing diagnostic approaches that differentiate AD clinical presentations from other dermatological conditions and in patients with skin of color (SOC)
- ✓ **108%** relative knowledge gain seen from learners in evaluating the efficacy of emerging AD treatments

Practice Change

86%
Reported intent to change their practice [n=1687]

89%
Reported the activity improved their ability to treat patients [n=1687]

84%
Indicated the activity addressed strategies for overcoming barriers to optimal patient care [n=1687]

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Level (1) Participation: Participation Funnel

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Unique visitors to the activity on the epocrates platform. Used for learner breakdown by degree and specialty.

Completed the activity pre-test on the epocrates platform. Used to understand pre-participation knowledge/competence.

Completed the activity and the post-test on the epocrates platform. Used to understand post-participation knowledge/competence and measure change from pre- to post-activity.

Completed the activity, passed the post-test, and completed the evaluation on the epocrates platform. Used to evaluate learner satisfaction, relevance of content, perception of bias, key takeaways, future needs, etc.

Completed the activity, passed the post-test, completed the evaluation, and claimed credit on the epocrates platform.

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Level (1) Participation: Degree/Profession

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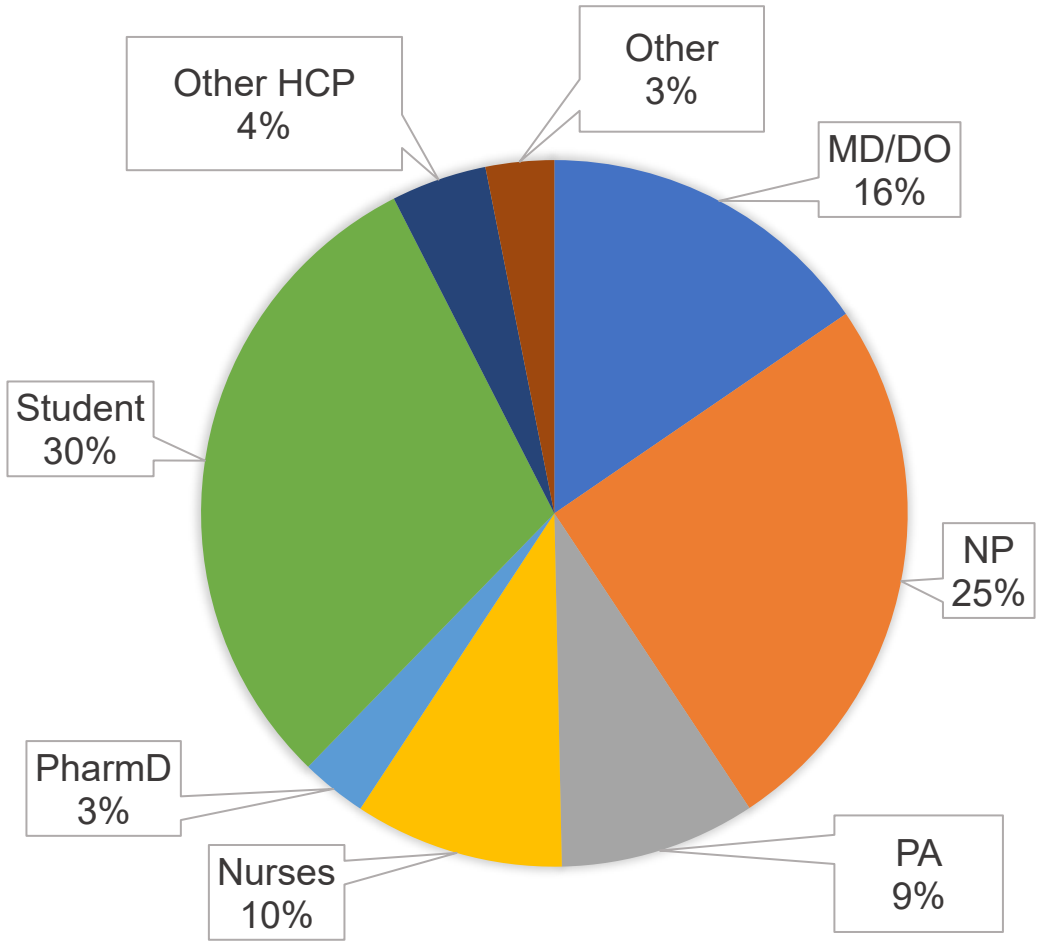

Degree	Total
MD/DO	844
NP	1,379
PA	490
Nurse	524
PharmD	165
Medical/Nursing/Pharmacy Student	1,651
Other HCP	239
Other (Researcher, administrator, consumer, etc.)	170
Total	**5,462**

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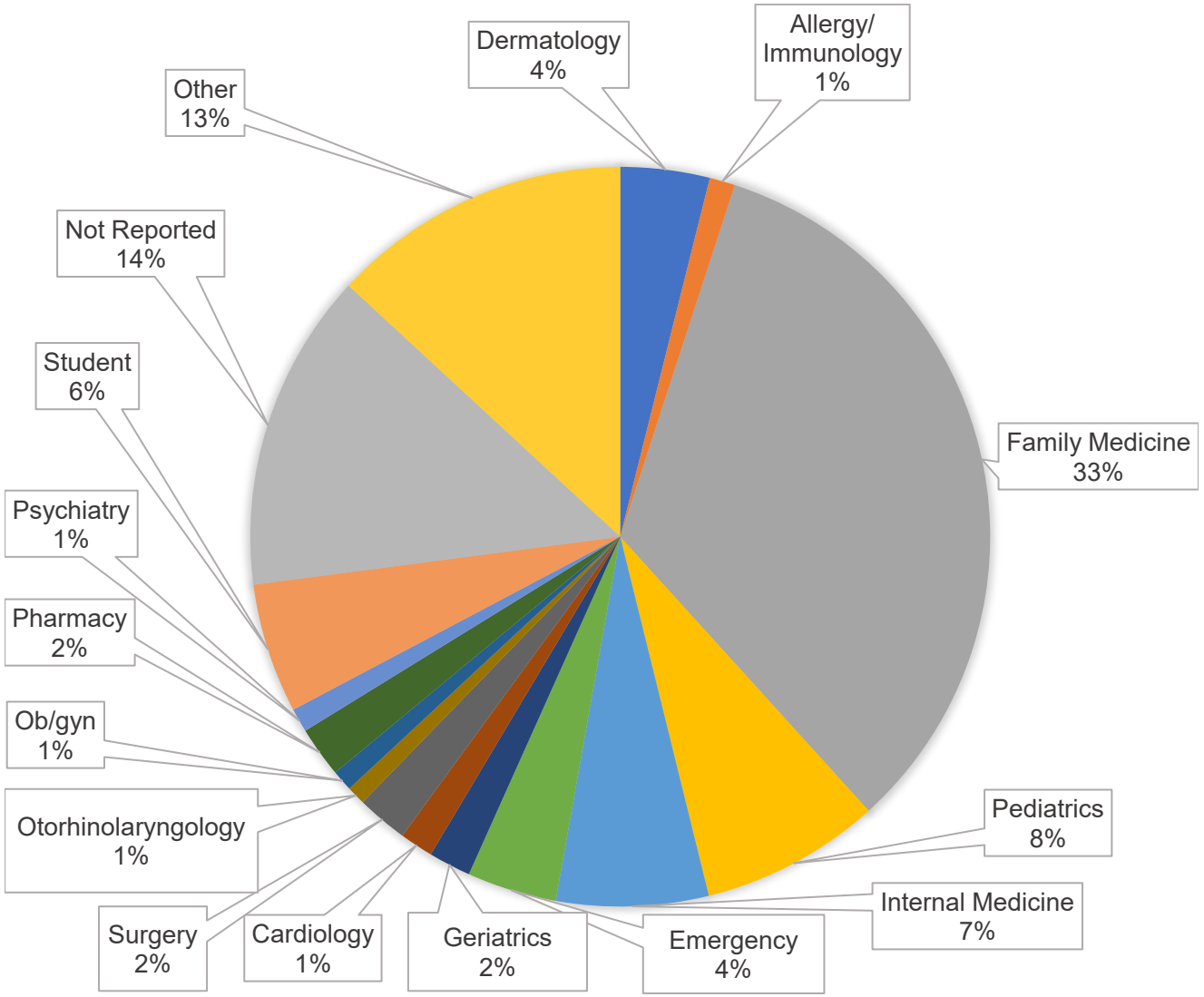
Level (1) Participation: Specialty

Final Outcomes Summary



Specialty	Total
Dermatology	213
Allergy/Immunology	61
Family Medicine	1,817
Pediatrics	430
Internal Medicine	363
Emergency Medicine	214
Geriatrics	101
Cardiology	80
Surgery	122
Otorhinolaryngology	45
Obstetrics & gynecology	50
Pharmacy	121
Psychiatry	57
Student	310
Not Reported	761
Other (oncology, radiology, gastroenterology etc.)	717
Total Learners	**5,462**

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Level (2) Satisfaction
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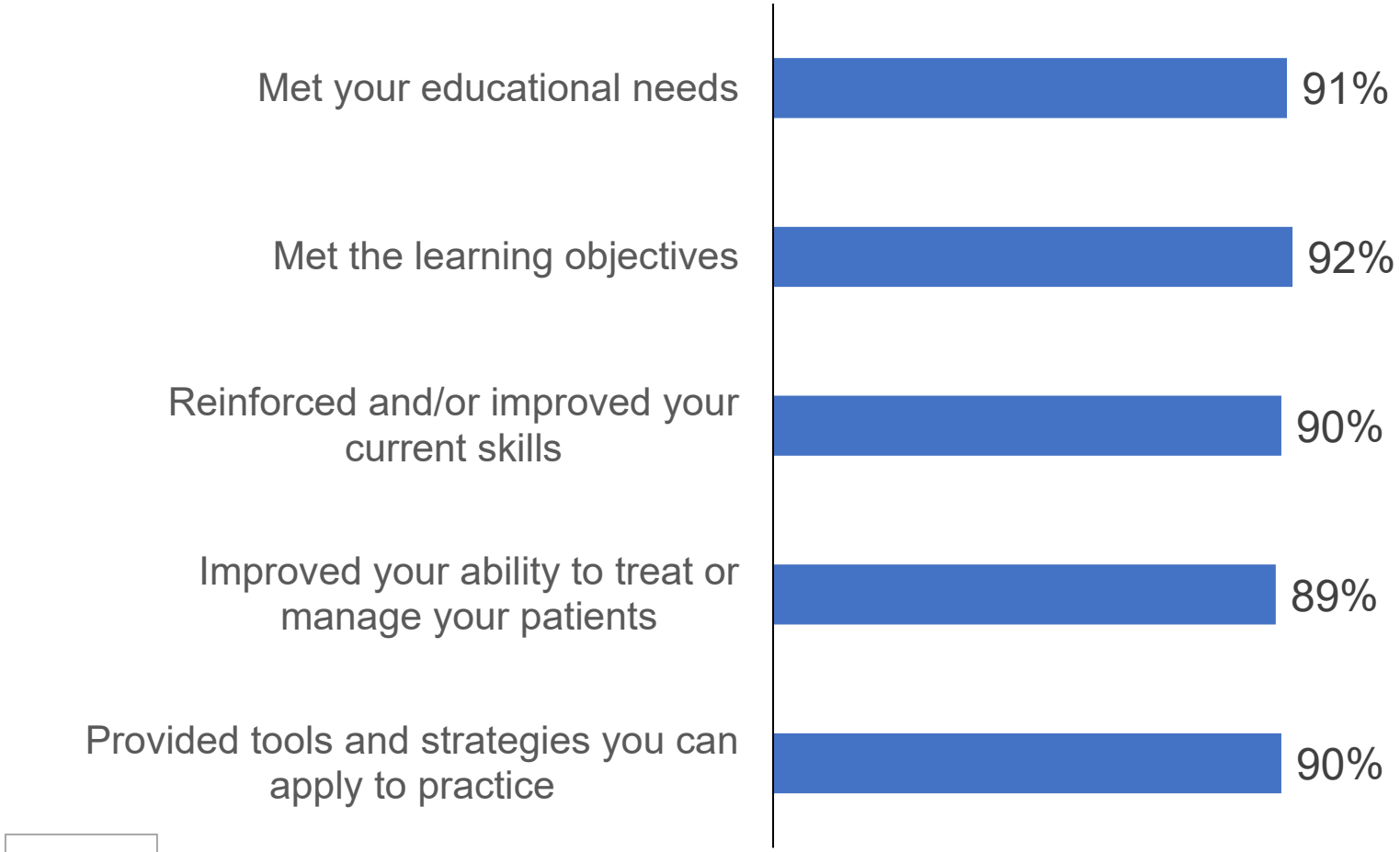
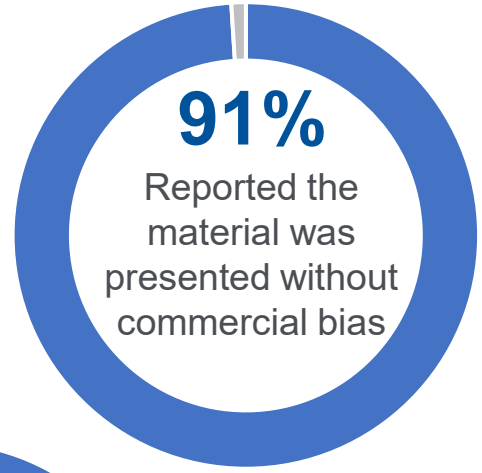
Evaluation respondents reported they "Strongly Agree" or "Agree" that the activity:



n=1687



n=1687

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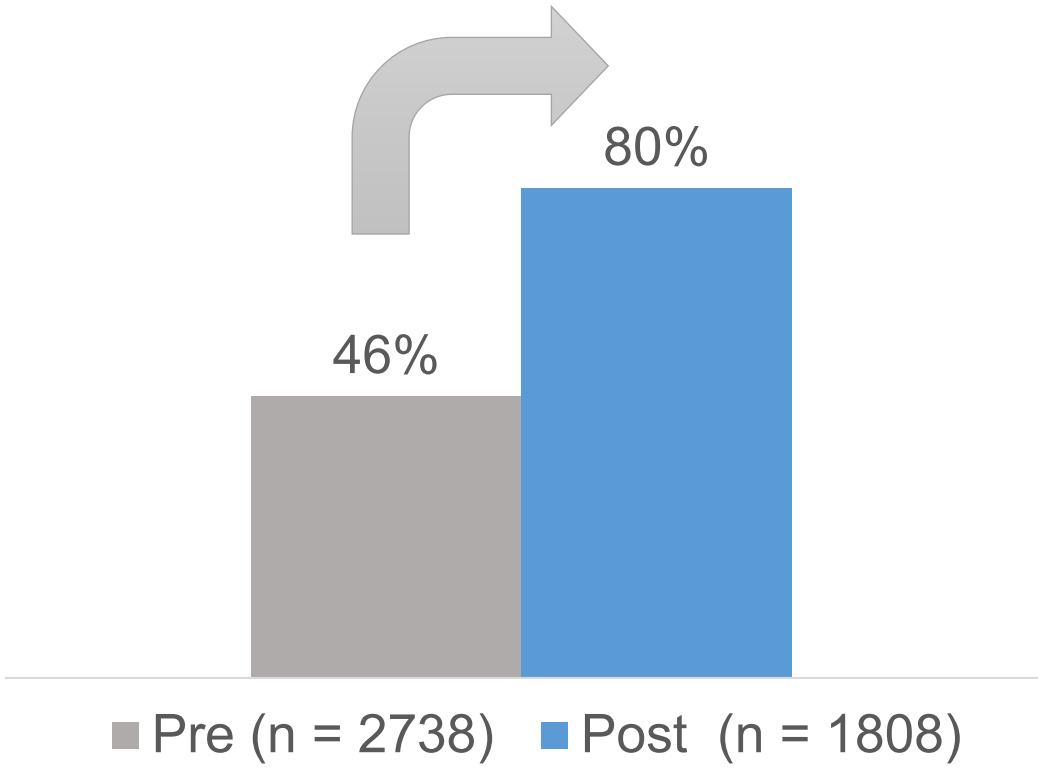
Level (3&4) Knowledge & Competence: Overall Gains

Final Outcomes Summary

Overall Knowledge and Competence Gain Across Learning Objectives



73% overall relative knowledge/ competence gain

34% overall absolute knowledge/ competence gain

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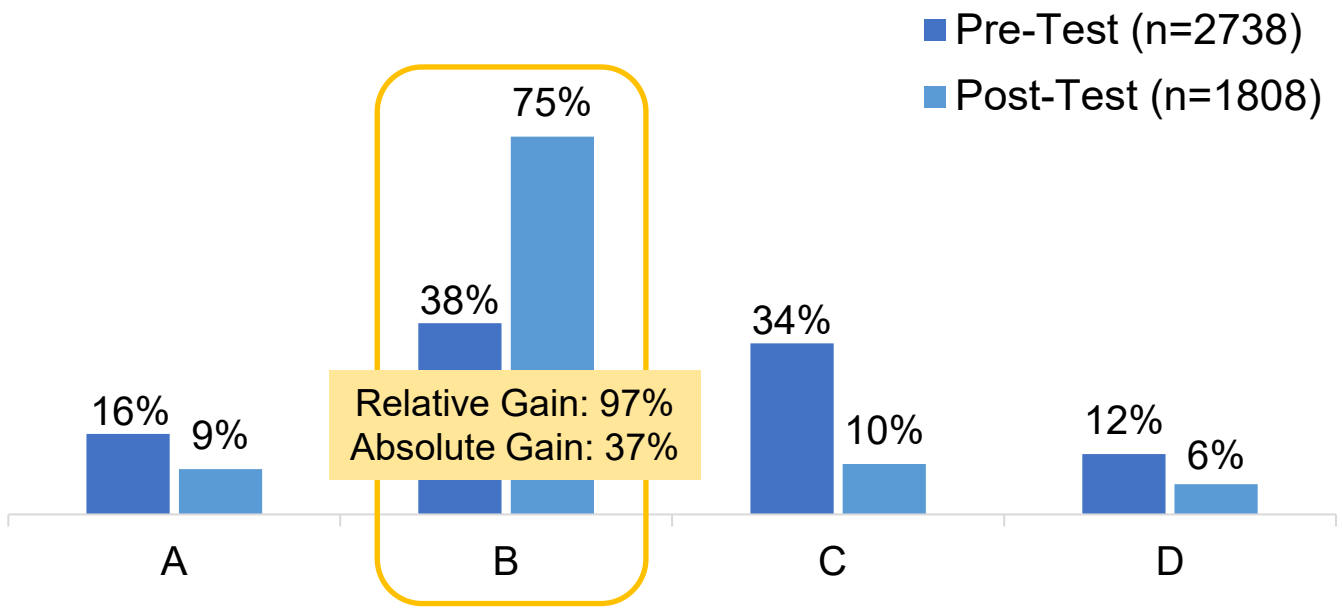
Level (3&4) Knowledge & Competence: Overall Gains

Final Outcomes Summary

Question 1: Which of the following best characterizes the interplay between immune dysregulation, genetic susceptibility, and skin barrier dysfunction in the pathophysiology of atopic dermatitis (AD)?



A. Th1-skewed immune activation drives keratinocyte hyperproliferation, while mutations in the FLG gene and increased ceramide production strengthen the epidermal barrier.

B. An imbalance of Th2/Th22-driven inflammation promotes epidermal barrier disruption, exacerbated by filaggrin (FLG) mutations and alterations in lipid composition.

C. Excessive IL-10 signaling leads to hyperactive regulatory T cells, which suppress inflammation but paradoxically weaken the skin barrier by degrading tight junction proteins.

D. Overexpression of IFN-γ and IL-12 enhances antimicrobial peptide (AMP) production, reducing microbial colonization and mitigating genetic susceptibility to barrier dysfunction.

Rationale: An imbalance of Th2/Th22-driven inflammation promotes epidermal barrier disruption, exacerbated by filaggrin (FLG) mutations and alterations in lipid composition

Learning Objective Addressed

1

Demonstrate knowledge of AD pathophysiology relating to immune dysregulation, genetic factors, and skin barrier dysfunction.

Outcomes Level Measured

3 Knowledge

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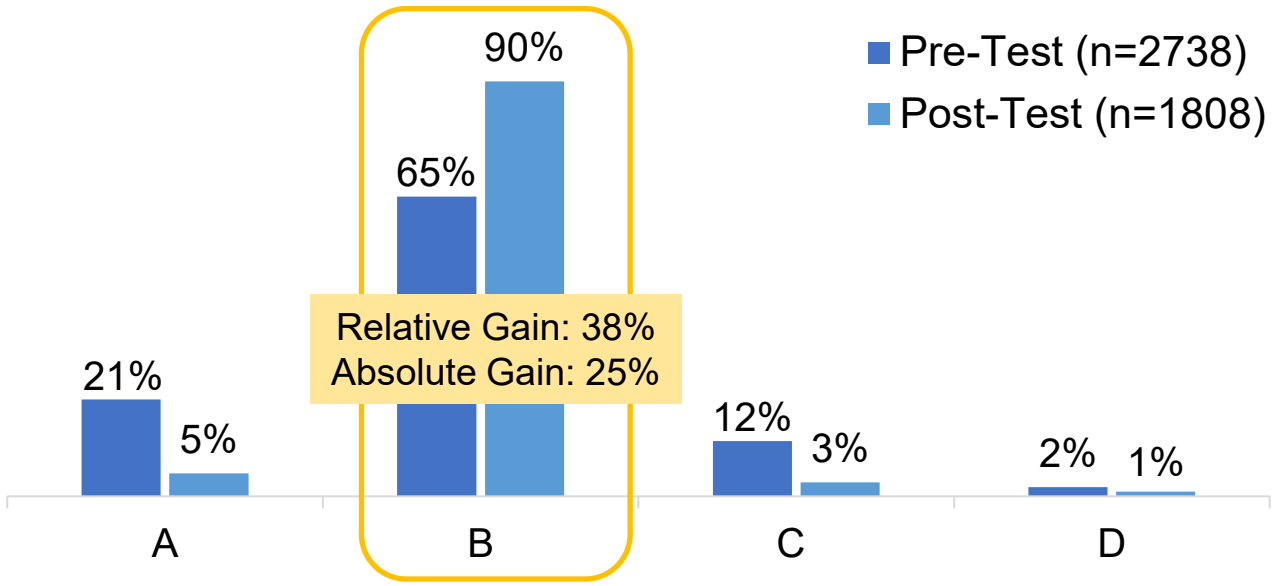
Level (3&4) Knowledge & Competence: Overall Gains

Final Outcomes Summary

Question 2: A 35-year-old Black patient with a history of chronic pruritus presents with hyperpigmented, lichenified plaques on the extensor surfaces of the arms and lower legs. The patient reports a history of asthma and seasonal allergies. Given the patient's skin findings and history, which of the following additional features would be most helpful in making a diagnosis of atopic dermatitis?



A. Well-demarcated erythematous plaques with silvery scale and nail pitting

B. Follicular accentuation, xerosis, and lichenification in areas of chronic scratching

C. Sharply demarcated patches of depigmentation without pruritus or scaling

D. Yellowish greasy scales in the nasolabial folds and scalp with minimal pruritus

Rationale: In skin of color, AD may present with less visible erythema and more pronounced hyperpigmentation, lichenification, xerosis, and follicular accentuation. These features help differentiate AD from conditions such as psoriasis (A), vitiligo (C), and seborrheic dermatitis (D).

Learning Objective Addressed

2 Develop diagnostic approaches that differentiate AD clinical presentations from other dermatological conditions and in patients with skin of color (SOC)

Outcomes Level Measured

4 Competence

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Level (3&4) Knowledge & Competence: Overall Gains

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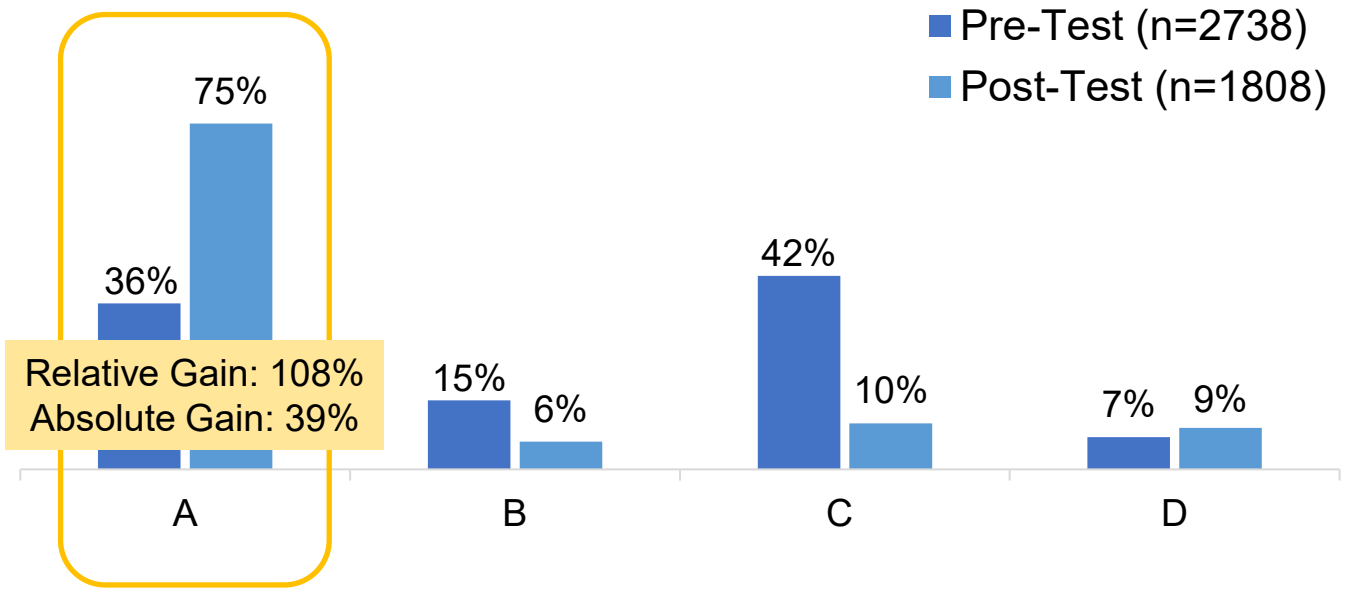
Question 3: Which of the following best describes the mechanism and clinical efficacy of emerging biologic and small-molecule treatments for moderate-to-severe atopic dermatitis (AD)?



A. IL-13 inhibition with biologic agents such as lebrikizumab has demonstrated significant improvement in EASI scores and pruritus reduction

B. Nemolizumab, an IL-31 inhibitor, should not be used in combination with topical corticosteroids

C. IL-23 inhibitors have emerged as first-line therapy for AD due to their ability to restore the epidermal barrier and suppress Th1-mediated inflammation.

D. Ox40 inhibitors such as amlitelimab and rocatinlimab are emerging oral medications for the treatment of AD

Rationale: IL-13 inhibition with biologic agents such as lebrikizumab has demonstrated significant improvement in EASI scores and pruritus reduction. Nemolizumab was exclusively studied with topical corticosteroids. IL-23 inhibitors are used in psoriasis. Ox40 inhibitors are injections.

Learning Objective Addressed

3 Evaluate the efficacy of emerging AD treatments

Outcomes Level Measured

3 Knowledge

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Level (4) Competence: Change in Confidence

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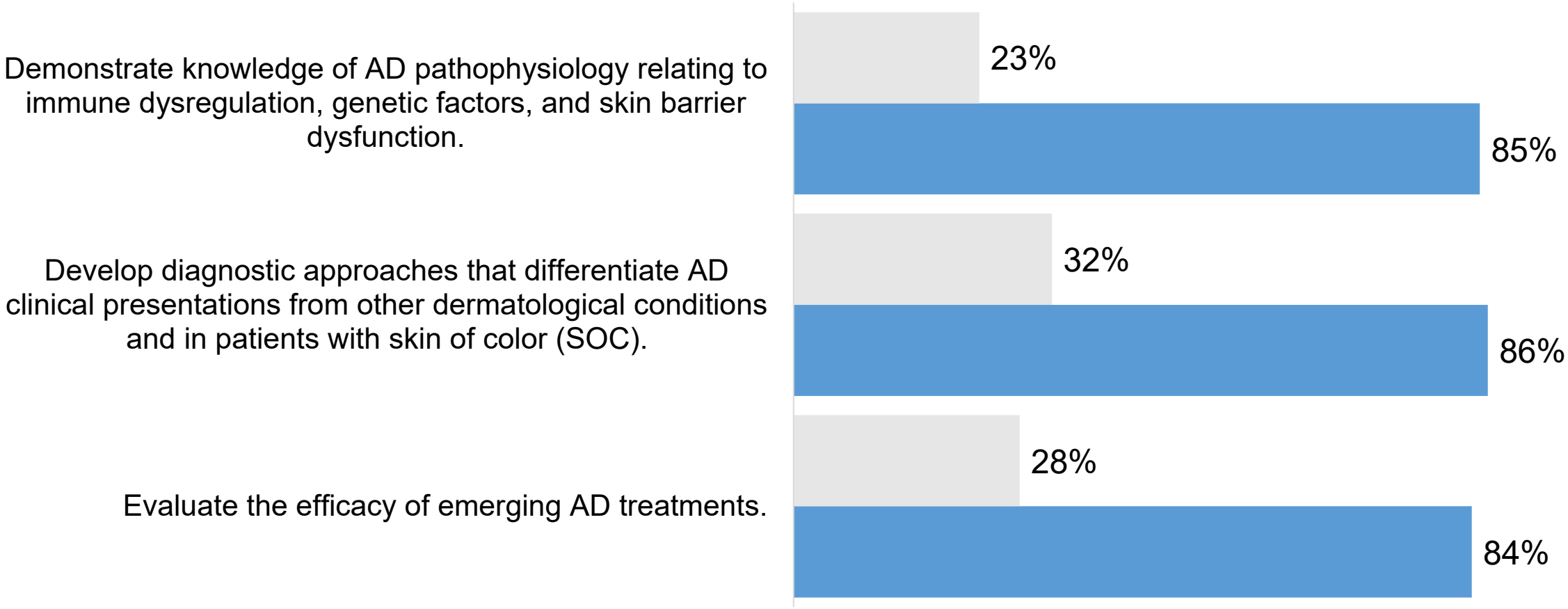

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Level (4) Competence: Practice Change

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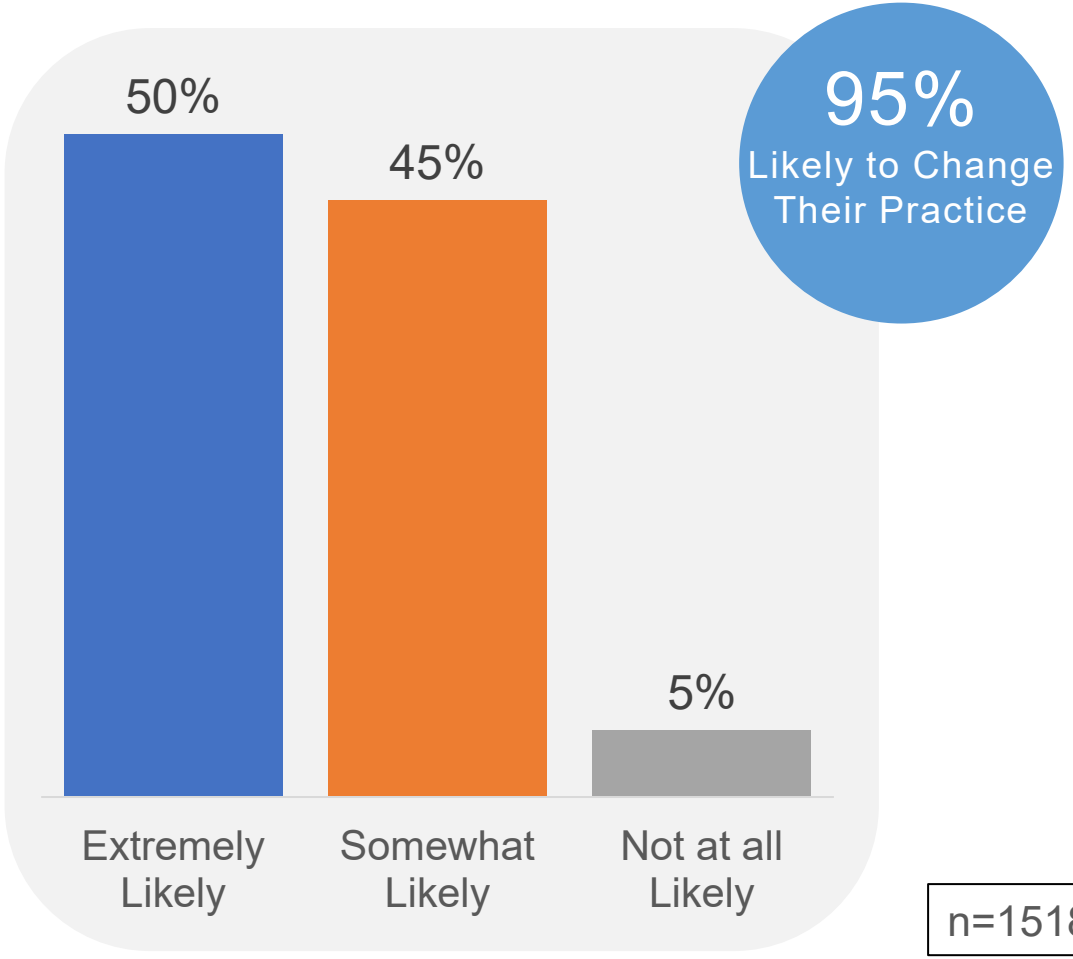
How likely are you to make changes in your practice?



n=1518

What changes will you incorporate into your practice as a result of what you learned?

- Assess quality of life and itch assessment scores
- Broaden medications used to treat AD. Expanding my toolbox.
- Cognizant of misdiagnosed AD.
- Awareness of effects including psychological.
- Consider other biologic agents earlier in treatment.
- Explain to my patients that AD isn't just a skin condition; there is a systemic element that needs to be addressed for best results.
- Improve my discussion with patients and recommend new treatments that avoid systemic steroid use.
- Make use of nonsteroidal topical medications.
- Recognize AD vs other conditions and first line treatment.
- Look for clues in skin of color.
- Refer patients to dermatology early to consider newer agents.
- Use guidelines for diagnosis and treatment and follow up more frequently.
- Use the aids to assist in determining treatment.

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Evaluation Survey Results: Barriers

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What barriers to optimal patient care are you facing that the activity will help to address?

- Access to care and patient compliance due to education on topic
- Addressed better care optimization for treatment.
- Communication/ explanation between patient and providers.
- Compliance and access to drug.
- Cost barriers and patient concerns for side effects.
- Delayed diagnosis in skin of color, treatment access considerations, and improving patient adherence through education on newer targeted therapies and shared decision-making
- Different treatment for different skin tones.
- Insurance constraints in newer therapies.
- For patients with chronic conditions like AD, biologics or systemic treatments may improve long-term compliance compared to topical treatments, especially in cases where topical therapies are burdensome or ineffective. The discussion around biologics could encourage exploring the benefits of starting these treatments earlier for patients with severe disease, potentially improving long-term management and quality of life.
- Medication adherence

84%

n = 1687

of evaluation respondents report the activity will help to address barriers to optimal patient care

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Evaluation Survey Results

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Key Takeaways

- “Accurate diagnosis and variety of treatment options customized to the patient.”
- “Alternative available treatment options and 2024 guidelines.”
- “Biological treatments for eczema.”
- “Communication between patient and family.”
- “Have a lower threshold for referring patients for systemic treatment if not easily managed with an appropriate skincare routine and occasional topical steroids.”
- “How to differentiate AD from other derm rashes and how to treat.”
- “Rashes are all different with different treatments.”
- “That AD is more of a chronic condition that can cause more issues than just the skin.”
- “The different side effects of AD that don't only involve the skin.”
- “The different approved non-steroidal treatments available.”
- “The importance of treating AD to better a pt's lifestyle.”
- “The wonderful advances in treatment of AD and the available and emerging AD therapies.”
- “Understanding the complicated inflammatory pathophysiology.”

Future Topics

- Atopic dermatitis in geriatrics
- Atopic triad and how these patients are treated
- Autoimmune related skin conditions
- Children skin conditions
- Comorbidities linked to AD
- Different skin diseases
- Lifestyle modification
- Lupus
- Managing cost issues of these new drugs
- More differential diagnosis with real world examples
- More topicals that are not steroids
- More treatment options
- Patient experience with treatment
- Presentation of atopic dermatitis in celiac disease
- Seborrheic Dermatitis
- Treatment options (oral and topical)

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Accreditation Details

Final Outcomes Summary

National Jewish Health is accredited with Commendation by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The National Jewish Health Office of Professional Education produced and accredited this program and adhered to all ACCME guidelines.

National Jewish Health designates this enduring material for a maximum of 1.0 *AMA PRA Category 1 Credits*™.

ACCME™
ACCREDITED WITH COMMENDATION

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