



# Conversations in Dermatology 2019

## Final Live Symposium Outcomes Report



### Addressing Type 2 Inflammation in Atopic Dermatitis: Individualizing Care Across Populations

Sanofi Genzyme and Regeneron Pharmaceuticals • IME-2018-13453

October 15, 2019



# Conversations in Dermatology 2019



716 Attendees



1 Activity



601 certificates issued

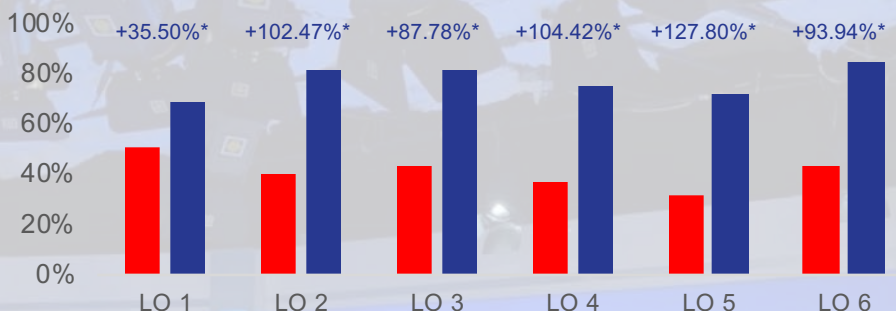
The findings reveal that this education has the potential to impact **803,286** patients with AD on an annual basis.

12,512-15,448

Paired pre/post Responses: N = 273-318  
PCA responses N= 221 (31%)

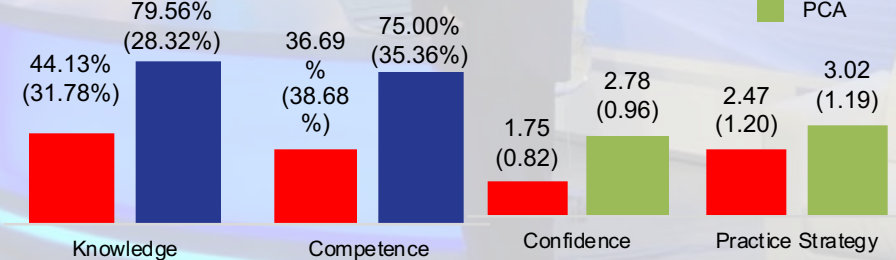
## Addressing Type 2 Inflammation in Atopic Dermatitis: Individualizing Care Across Populations

### Learning Gains Across Objectives



- ❖ **LO 1:** Describe the pathogenesis of atopic dermatitis (AD), particularly the role of the Th 2 pathway
- ❖ **LO 2:** Demonstrate increased ability to recognize the clinical presentations and differential diagnosis of AD
- ❖ **LO 3:** Discuss the current research and trial data supporting treatment options for AD
- ❖ **LO 4:** Individualize AD treatment with consideration to the full spectrum of treatment options and disease severity
- ❖ **LO 5:** Recognize the risks and safety profiles of current treatments for effective AD management
- ❖ **LO 6:** Integrate the recognition of comorbidities into the management of AD

### Learning Domain Analysis



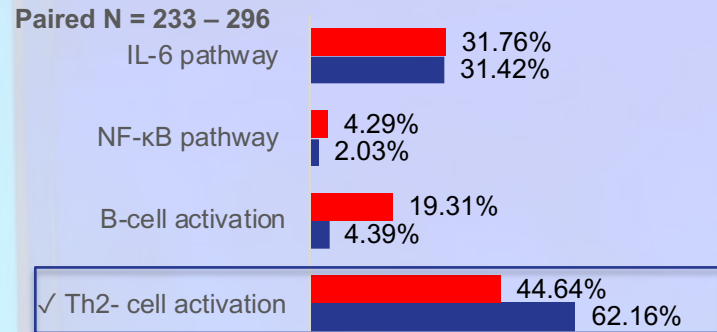
- ❖ Learners demonstrated strong and significant improvements from Pre- to Post-Test in Knowledge and Competence
  - ❖ In spite of these gains, Post-Test scores in both Knowledge and Competence remained low
- ❖ In Confidence and practice strategy, which were measured at Pre-Test and PCA, though strong increases were measured, Pre-Test and PCA ratings were low ( $\leq 3.02$ )

### Persistent Learning Gaps/Needs

#### Pathways involved in the pathophysiology of atopic dermatitis

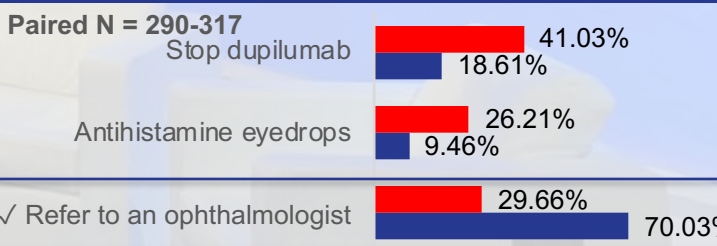
On a Knowledge item asking learners about which immunologic pathways plays a central role in atopic dermatitis, learners remained challenged at Post-Test.

Which of the following immunologic pathways is centrally involved in the pathophysiology of atopic dermatitis?



#### Referral of AD patients with ophthalmologic symptoms to an ophthalmologist

On a Competence item presenting the case of a man taking dupilumab for severe AD, learners struggled at Post-Test to identify the need to refer the patient to an ophthalmologist.



No treatment is needed at this time  
Pre-Test: 3.10%  
Post-Test: 1.89%

Sanofi Genzyme and Regeneron Pharmaceuticals • IME-2018-13453



2019 Conversations Activity	Date	Participants
Conversations in Dermatology 2019	6/8/19	716



Mercedes E. Gonzalez, MD  
Medical Director,  
Pediatric Dermatology of Miami  
Clinical Assistant Professor,  
Dr. Phillip Frost Department of Dermatology  
University of Miami Miller School of Medicine  
Clinical Assistant Professor Herbert Wertheim College of Medicine,  
Florida International University  
Miami, FL

Cost: Free  
Start Date: 05/01/2019  
Expiration Date: 07/01/2020  
Target Audience: Primary Care Providers  
Format: RealCME  
Estimated Time To Complete CME Activity: 1.0 Hour  
Credit(s): 1.0 AMA PRA Category 1 Credit™, 1.0 AANP Contact hour which includes 0.75 pharmacology hours  
Hardware/Software Requirements: Any web browser



Linda F. Stein Gold, MD, FAAD  
Director of Dermatology Clinical Research Division Head of Dermatology  
Henry Ford Health System West  
Bloomfield, MI

# Curriculum Patient Impact

In the evaluation, learners (N = 716) were asked to report how many patients with atopic dermatitis they see in any clinical setting per week by selecting a range. The resulting distribution of learner responses was then extrapolated to reflect the total number of learners who have attended the onsite and online meetings.

The findings reveal that this education has the potential to impact

**803,286**

patients with atopic dermatitis on an annual basis.

**12,512-15,446 patients with atopic dermatitis on a weekly basis**

12,512–  
15,448

## Course Director

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**Brad P. Glick, DO, MPH, FAAD, FAOCD**  
Program Director, Dermatology Residency  
Larkin Community Hospital Palm Springs  
Deputy Chair, Individual Giving Committee,  
AAD Vice President, Florida Society for Dermatology and  
Dermatologic Surgery Clinical Assistant Professor of Dermatology  
Herbert Wertheim College of Medicine  
Miami, FL

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Sheila Lucas, CWEP

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Deborah Paschal, CRNP

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Florida International University  
Miami, FL

**Linda F. Stein Gold, MD, FAAD**  
Director of Dermatology Clinical Research Division Head of Dermatology  
Henry Ford Health System West  
Bloomfield, MI



# Conversations in Dermatology 2019

## Commercial Support

The Conversations in Dermatology: 2019 series of CME activities were supported through educational grants or donations from the following companies:

- ❖ Genentech
- ❖ Sanofi Genzyme and Regeneron Pharmaceuticals

# Overview

# Learning Objectives

- ❖ Describe the pathogenesis of atopic dermatitis (AD), particularly the role of the Th 2 pathway
- ❖ Demonstrate increased ability to recognize the clinical presentations and differential diagnosis of AD
- ❖ Discuss the current research and trial data supporting treatment options for AD
- ❖ Individualize AD treatment with consideration to the full spectrum of treatment options and disease severity
- ❖ Recognize the risks and safety profiles of current treatments for effective AD management
- ❖ Integrate the recognition of comorbidities into the management of AD



## One Live Virtual CME Symposium



## Enduring CME Symposium Webcast

<https://www.naceonline.com/courses/addressing-type-2-inflammation-in-atopic-dermatitis-individualizing-care-across-populations>



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### Addressing Type 2 Inflammation in Atopic Dermatitis: Individualizing Care Across Populations

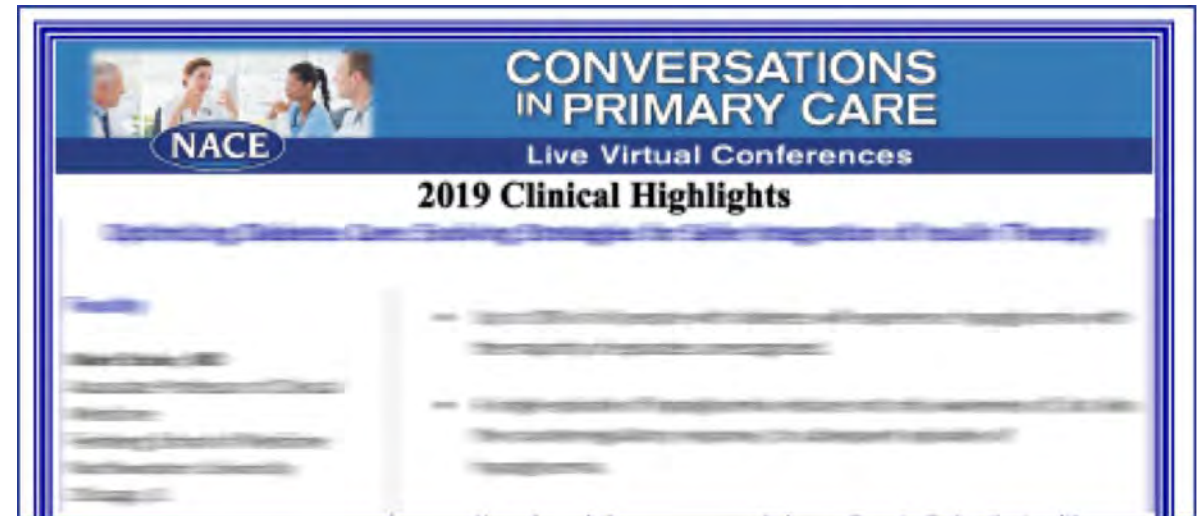


Linda F. Stein, MD  
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Henry Ford Health System West  
Bloomfield, MI

Cost: Free  
Start Date: 05/01/2019  
Expiration Date: 07/01/2020  
Target Audience: Primary Care Providers  
Format: RealCME  
Estimated Time To Complete CME Activity: 1.0 Hour  
Credit(s):  
1.0 AMA PRA Category 1 Credit™  
1.0 AANP Contact hour which includes 0.75 pharmacology hours  
Hardware/Software Requirements: Any web browser

## Clinical Highlights eMonograph

eMonograph, containing key teaching points from the CME activity, was distributed 1 week after the meeting to all attendees.





# Outcomes Methodology

Learning outcomes were measured using matched Pre-Test and Post-Test scores for Knowledge, Performance, Confidence, and practice strategy and across all of the curriculum's Learning Objectives.

Outcomes Metric	Definition	Application
<b>Percentage change</b>	This is how the score changes resulting from the education are measured. The change is analyzed as a relative percentage difference by taking into account the magnitude of the Pre-Test average.	Differences between Pre-Test, Post-Test, and PCA score averages
<b>P value (p)</b>	This is the measure of the statistical significance of a difference in scores. It is calculated using dependent or independent samples t-tests to assess the difference between scores, taking into account sample size and score dispersion. Differences are considered significant for when $p \leq .05$ .	Significance of differences between Pre-Test, Post-Test, and PCA scores and among cohorts
<b>Effect size (d)</b>	This is a measure of the strength/magnitude of the change in scores (irrespective of sample size). It is calculated using Cohen's d formula, with the most common ranges of d from 0-1: d < .2 is a small effect, d=.2-.8 is a medium effect, and d > .8 is a large effect.	Differences between Pre-Test and Post-Test score averages
<b>Power</b>	This is the probability (from 0 to 1) that the "null hypothesis" (no change) will be appropriately rejected. It is the probability of detecting a difference (not seeing a false negative) when there is an effect that is dependent on the significance (p), effect size (d), and sample size (N).	Differences between Pre-Test and Post-Test score averages
<b>Percentage non-overlap</b>	This is the percentage of data points at the end of an intervention that surpass the highest scores prior to the intervention. In this report, it will reflect the percentage of learners at Post-Test who exceed the highest Pre-Test scores.	Differences between Pre-Test and Post-Test score averages



# 2<sup>nd</sup> Annual Conversations in Dermatology 2019 Participation

## Activity Date: Saturday, June 8, 2019

- ❖ 3.0 credit live online CME/CE virtual symposium
- ❖ 2 topics and faculty Q and A segment
- ❖ **Avg. live learner engagement: 2 hrs. 49 minutes**
- ❖ 10,117 Pre and post test responses
- ❖ 243 questions from the live clinician audience

716  
Attendees

## Dedicated, Engaged, Clinician Attendees



## Outstanding Audience Engagement

616 out of 716 live attendees (86%) Achieved an Engagement Score of 9/10 or 10/10



Widgets Opened



Time in Webcast



Questions Asked



Polls Answered



Surveys Submitted



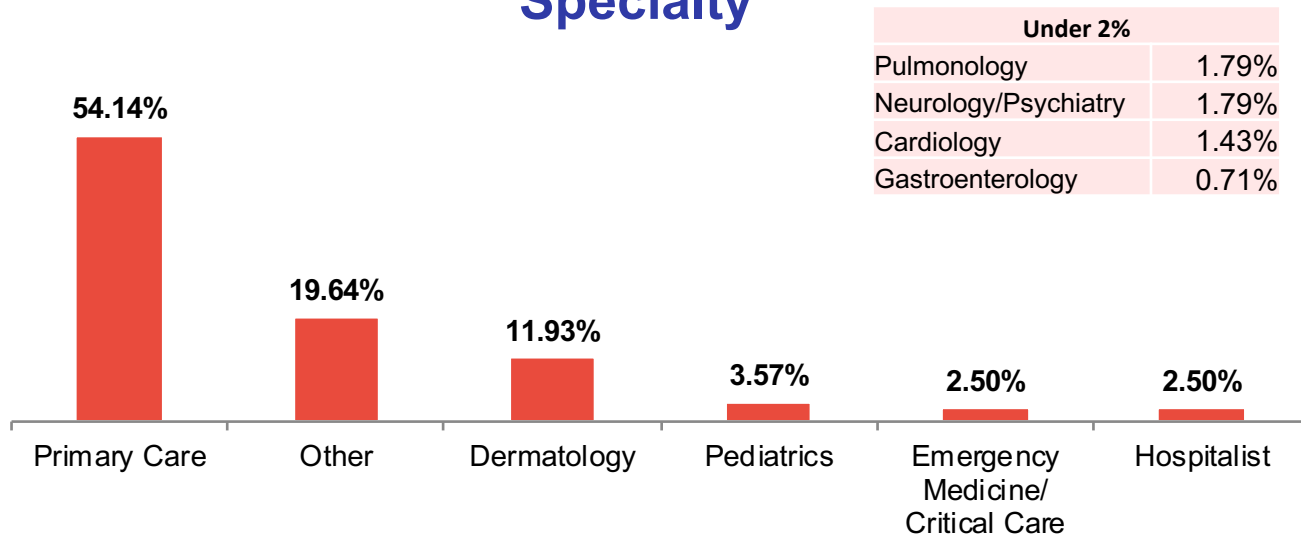
Resources Viewed

### Engagement Score Index Contributors:

- Length of time watching the webcast (up to 4.5)
- Number of polls answered (up to 2.0)
- Number of questions asked (up to 1.5)
- Number of complementary resources viewed (up to 1.0)
- Number of widgets opened on the console (up to 1.0)

# Level 1: Demographics and Patient Reach

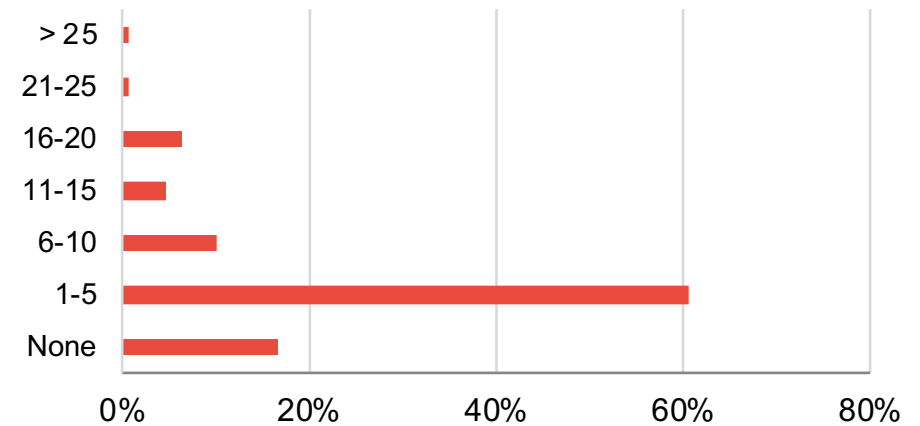
## Specialty



Under 2%	
Pulmonology	1.79%
Neurology/Psychiatry	1.79%
Cardiology	1.43%
Gastroenterology	0.71%

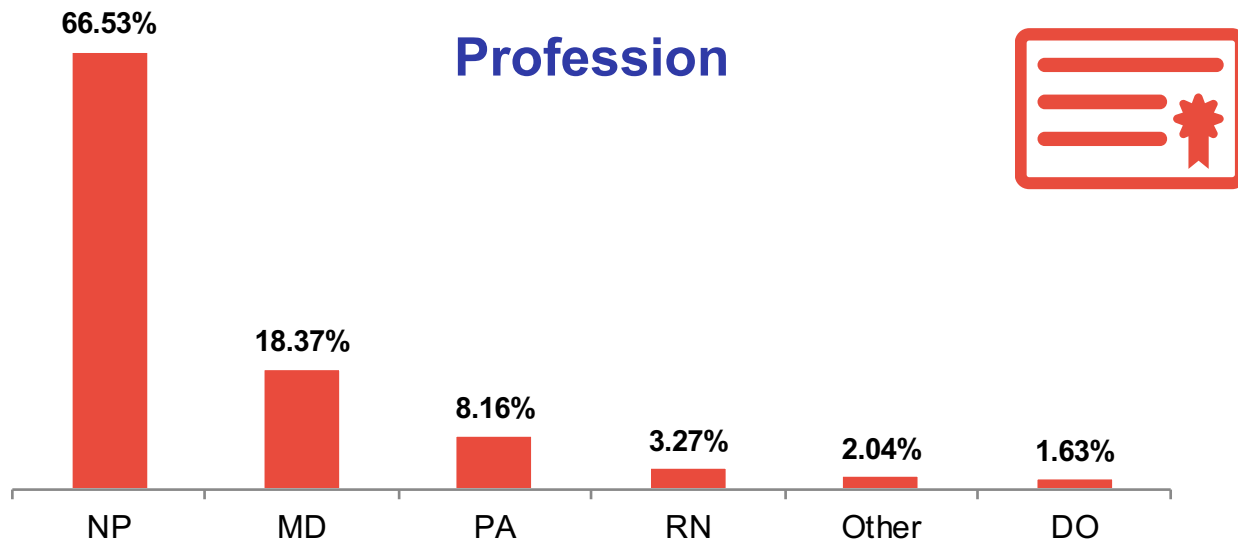
Patient Care Focus: 91%

## Patients with atopic dermatitis seen each week, in any clinical setting:

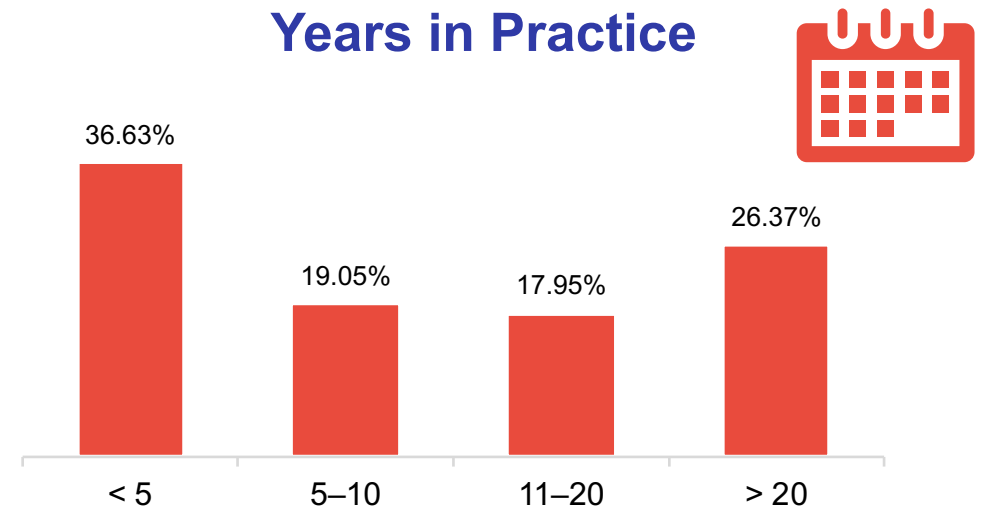


Average number of patients with atopic dermatitis seen each week per clinician: 6

## Profession



## Years in Practice

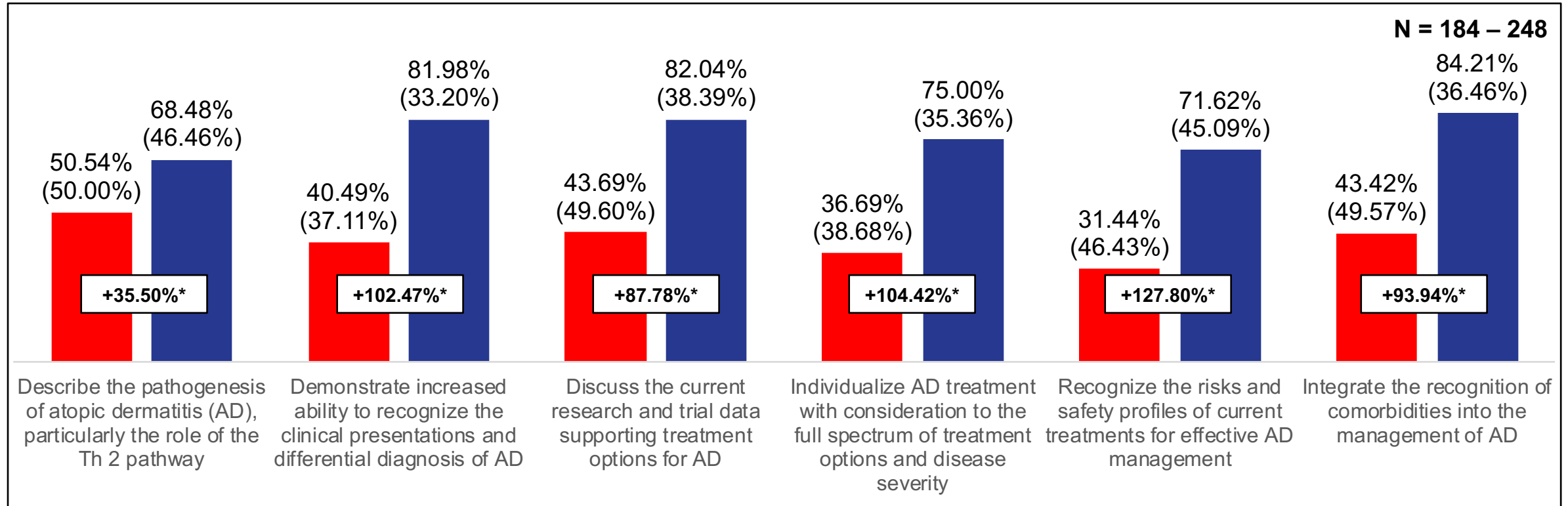




**Level 2-5:  
Outcomes Metrics**

# Learning Objectives Analysis

Pre-Test  
Post-Test



- ❖ Across all six curriculum Learning Objectives, learners demonstrated significant and substantial improvements, ranging from 36% to 128%
- ❖ Post-Test scores remained low on the Objectives related to the pathogenesis of AD, to treatment individualization, and to the risks and safety profiles of current treatments
- ❖ The highest scoring Learning Objectives addressed differential diagnosis, current research data, and recognition of comorbidities for AD

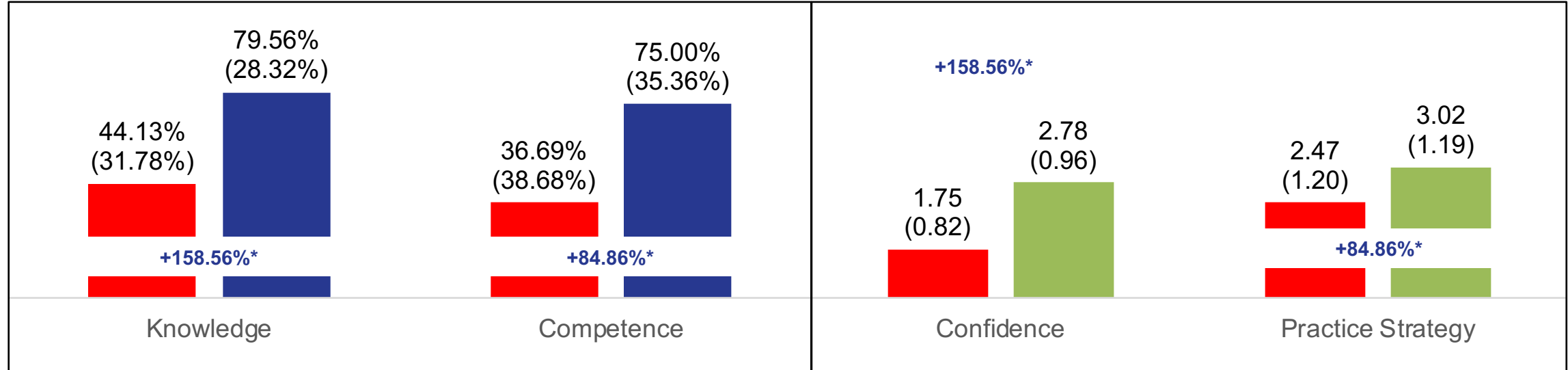
Note: data are matched.

\* indicates significance,  $p < 0.05$ .

# Learning Domain Analysis

Pre-Test Post-Test PCA

(N = 248–294)



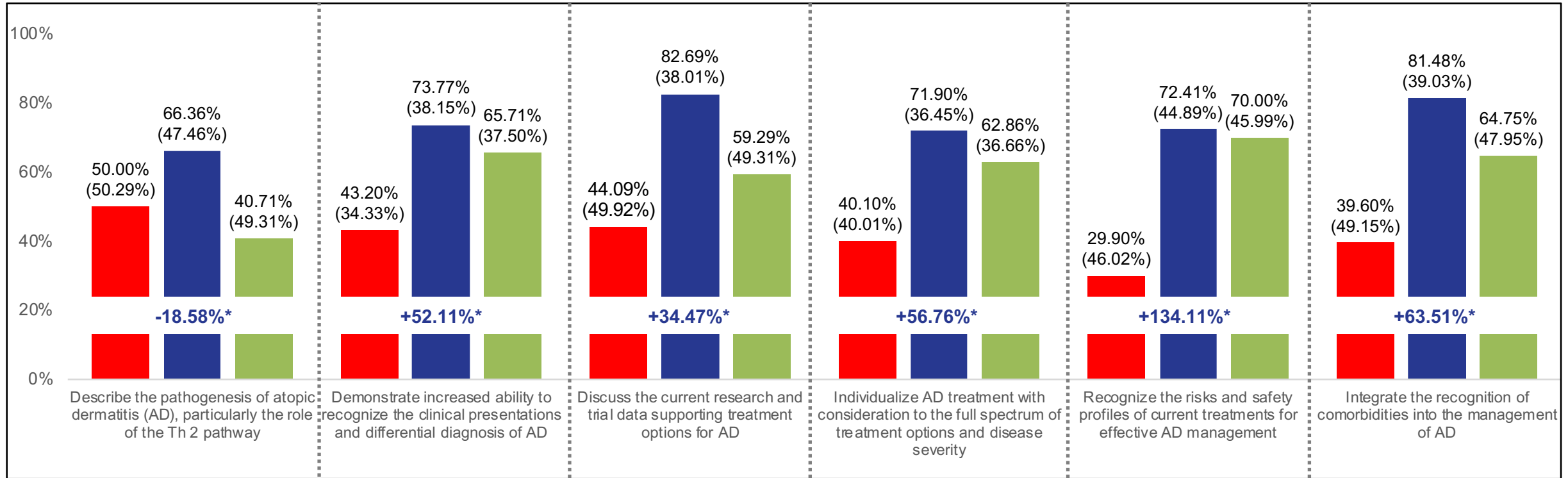
- ❖ Learners demonstrated strong and significant improvements from Pre- to Post-Test in Knowledge and Competence
  - ❖ In spite of these gains, Post-Test scores in both Knowledge and Competence remained low
- ❖ In Confidence and practice strategy, which were measured at Pre-Test and PCA, though strong increases were measured, Pre-Test and PCA ratings were low ( $\leq 3.02$ ). The confidence score (2.78) was measured in learners' reported confidence in ability to integrate evolving targeted therapies into the management of patients with atopic dermatitis. Learners also reported a propensity to utilize targeted treatments when managing patients with atopic dermatitis (3.02).

\*significant at the  $p \leq 0.05$  level, matched data

# 4 Week Learning Objectives Retention Analysis

Pre-Test Post-Test PCA

(N = 139–441)



- ❖ Substantial and significant gains were retained five of the six curriculum learning objectives
- ❖ A decrease in score from Pre-Test to PCA was measured on the Learning Objective related to the pathogenesis of AD and the Th 2 pathway
  - ❖ A single item covered this Learning Objective, which asked learners to identify the immunologic pathway “centrally involved in the pathophysiology of AD”

Note: data is matched; learners with a score for the given domain on both the Pre-Test and PCA are included

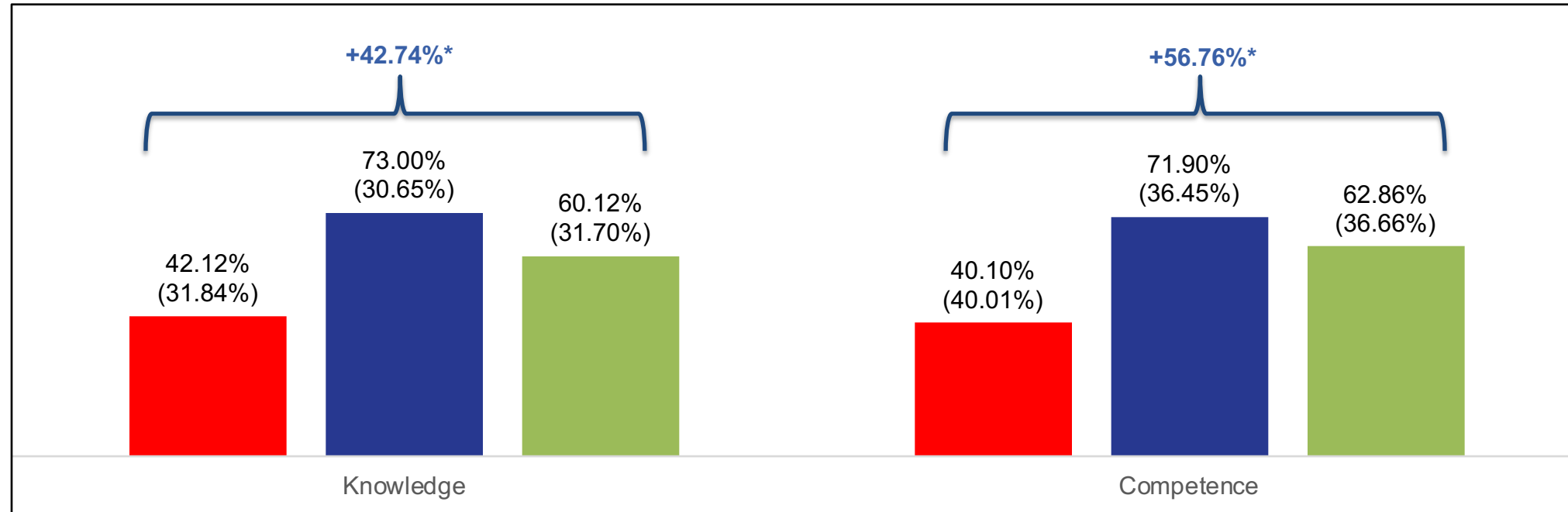
\*significant at the  $p \leq 0.05$  level



# 4-Week Learning Domain Retention Analysis

Pre-Test Post-Test PCA

(N = 221 – 441)



At follow-up:

- ❖ In addition to collecting Confidence and Practice data for the curriculum, the Post Curriculum Assessment (PCA) repeated questions from the Knowledge and Competence domains
- ❖ A statistically significant net gain was measured from Pre-Test to the Post Curriculum Assessment (PCA) in both Knowledge (43%) and Competence (57%)
- ❖ In both Knowledge and Competence, some decrease in score was measured between Post-Test and PCA, reflecting a need for further reinforcement of both declarative and case-based content

*Note: data is matched; learners with a score for the given domain on both the Pre-Test and PCA are included*

*\*significant at the  $p \leq 0.05$  level*

# Curriculum/Activity Intervention Effect

Learning Domain	Effect Size*	% Non-Overlap
Knowledge	0.546	44.63%
Competence	0.533	39.65%

Effect Size Definition: This is a standardized measure of the strength/magnitude of the change in scores, irrespective of sample size. This metric quantifies the association between outcome and exposure to education, in a way which makes meta-analysis possible. There exist many types of effect size measures, each appropriate in different situations. We select Cohen's  $d$  for this analysis, which is a standardized difference in mean. Most commonly,  $d$  ranges from 0–1:  $d < 0.2$  is a small effect,  $d = 0.2–0.8$  is a medium effect, and  $d > 0.8$  is a large effect.

# Cohort Comparison by Profession: Learning Objectives

Learning Objective	Nurse Practitioners				Physicians			
	N	Pre-Test	Post-Test	% Change	N	Pre-Test	Post-Test	% Change
Describe the pathogenesis of atopic dermatitis (AD), particularly the role of the Th 2 pathway	77	48.05% (49.96%)	75.32% (43.11%)	+56.75%*	29	65.52% (47.53%)	75.86% (42.79%)	+15.78%*
Demonstrate increased ability to recognize the clinical presentations and differential diagnosis of AD	101	39.11% (37.63%)	80.20% (33.06%)	+105.06%*	33	42.42% (32.85%)	86.36% (28.26%)	+103.58%*
Discuss the current research and trial data supporting treatment options for AD	90	51.11% (49.99%)	84.44% (36.24%)	+65.21%*	27	33.33% (47.14%)	85.19% (35.52%)	+155.60%*
Individualize AD treatment with consideration to the full spectrum of treatment options and disease severity	102	28.43% (36.72%)	74.51% (34.12%)	+162.08%*	36	44.44% (42.13%)	80.56% (33.91%)	+81.28%*
Recognize the risks and safety profiles of current treatments for effective AD management	96	26.04% (43.89%)	71.88% (44.96%)	+176.04%*	33	33.33% (47.14%)	78.79% (40.88%)	+136.39%*
Integrate the recognition of comorbidities into the management of AD	102	41.18% (49.22%)	83.33% (37.27%)	+102.36%*	30	46.67% (49.89%)	80.00% (40.00%)	+71.42%*

- ❖ Across all six Learning Objectives, nurse practitioners and physicians both achieved significant improvements from Pre- to Post-Test
- ❖ On five of the six Learning Objectives, physicians demonstrated higher Post-Test scores, compared to nurse practitioners
- ❖ For both nurse practitioners and physicians, the lowest scoring items related to the pathogenesis of AD and risks and safety profiles of current treatments

# Cohort Comparison by Profession: Learning Domains

Learning Domain	Nurse Practitioners				Physicians			
	N	Pre-Test	Post-Test	% Change	N	Pre-Test	Post-Test	% Change
Knowledge	108	46.45% (30.60%)	81.48% (25.74%)	+75.41%*	37	47.52% (31.53%)	82.21% (24.44%)	+73.00%*
Competence	102	28.43% (36.72%)	74.51% (34.12%)	+162.08%*	36	44.44% (42.13%)	80.56% (33.91%)	+81.28%*

- ❖ In both Knowledge and Competence, nurse practitioners and physicians both exhibited significant and substantial improvements, from Pre-Test to Post-Test
- ❖ Both nurse practitioners and physicians had stronger improvements in Competence compared to Knowledge, from low Pre-Test scores
- ❖ Compared to nurse practitioners, physicians had higher Pre- and Post-Test scores in both Knowledge and Competence

(4-week Post Assessment)

Please select the specific areas of *skills, or practice behaviors*, you have improved regarding the treatment of patients with atopic dermatitis since this CME activity. (Select all that apply.)

N=221

53%

Patient education

68%

Disease state awareness

56%

Pharmacotherapy

57%

Diagnostic evaluation

48%

Screening protocols

40%

Non-pharmacotherapy

48%

Timely referral

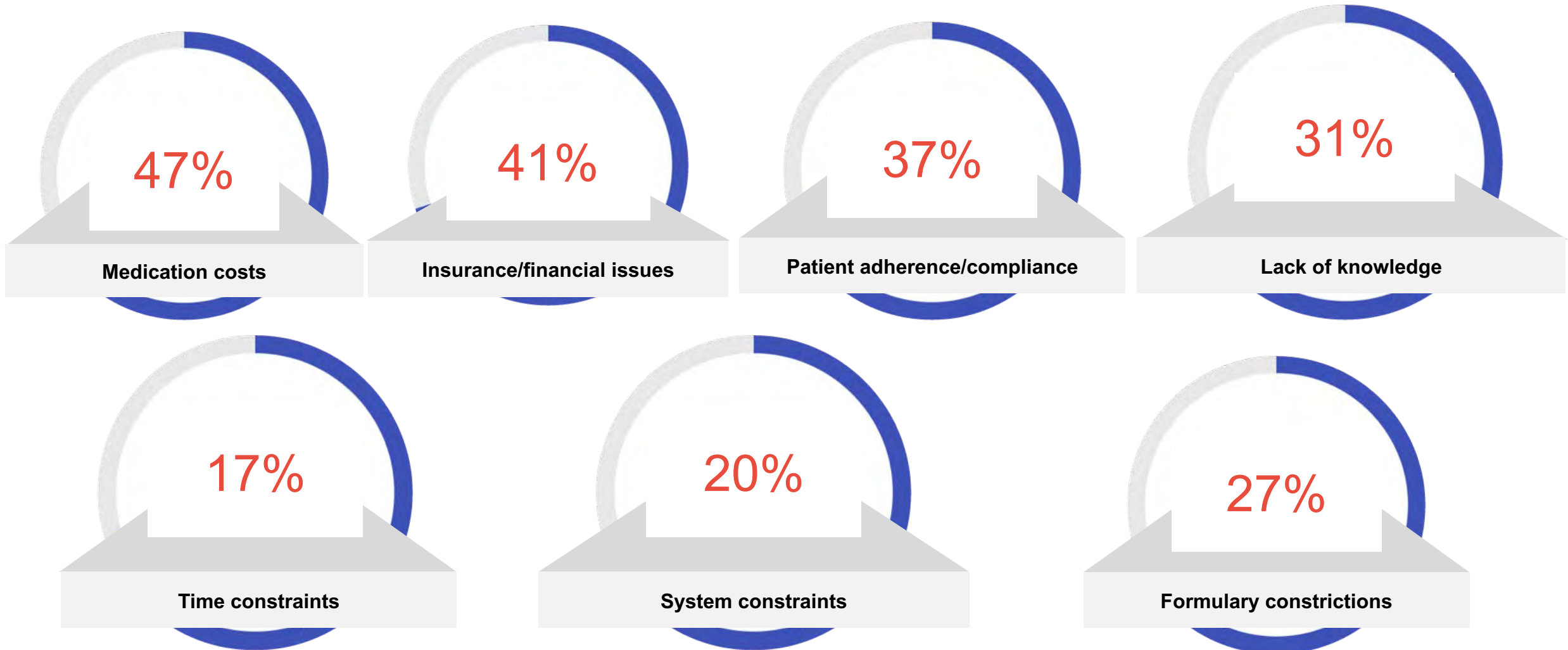
38%

Patient engagement regarding treatment options

(4-week Post Assessment)

## What specific *barriers* have you encountered that may have prevented you from successfully implementing strategies for patients with atopic dermatitis since this CME activity? (Select all that apply.)

N=221



# Identified Learning Gap, 1 of 2:

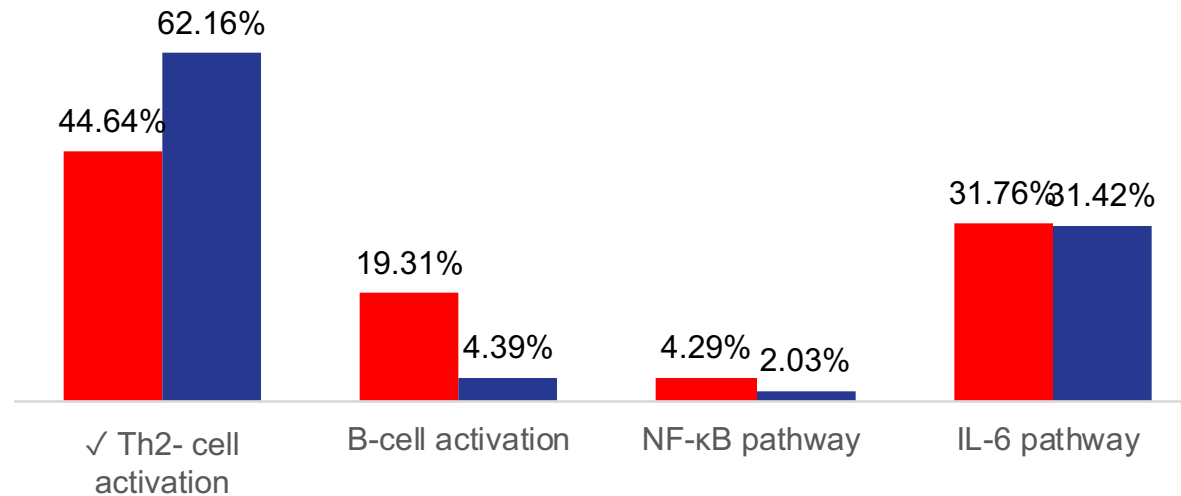
## *Pathways involved in the pathophysiology of atopic dermatitis*

On a Knowledge item asking learners about which immunologic pathway plays a central role in atopic dermatitis, learners remained challenged at Post-Test.

**Knowledge: Which of the following immunologic pathways is centrally involved in the pathophysiology of atopic dermatitis?**

### Results:

- At Post-Test, 62% of learners correctly answered: “Yes”



## Identified Learning Gap, 2 of 2:

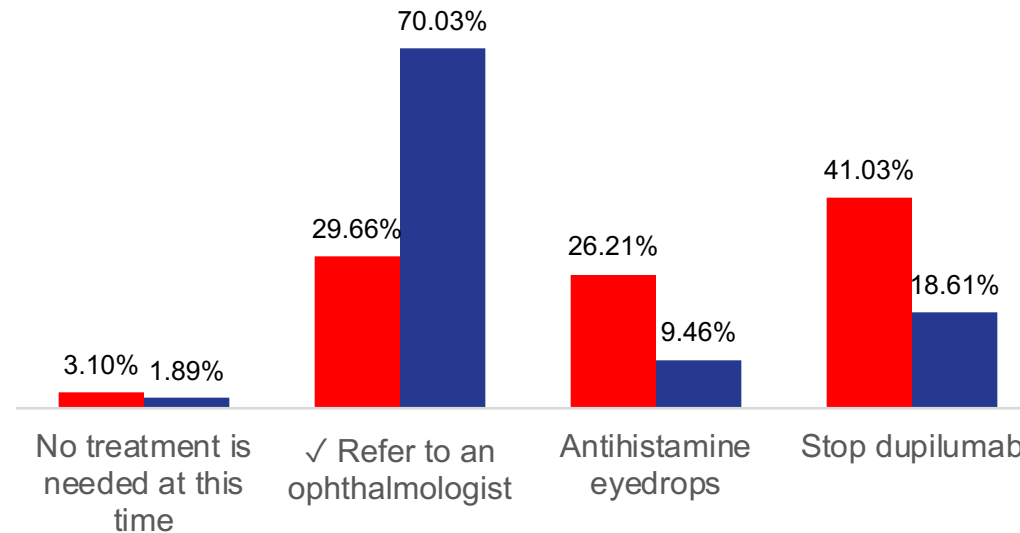
### *Referral of AD patients with ophthalmologic symptoms to an ophthalmologist*

On a Competence item presenting the case of a man taking dupilumab for severe AD, learners struggled at Post-Test to identify the need to refer the patient to an ophthalmologist.

**Competence:** A 27-year-old man with an 18-year history of AD was prescribed dupilumab for his severe AD. At his 2-month follow-up, he presents with complaints of burning and itching in his eyes. Examination shows moderate conjunctivitis in both eyes, moderate blepharitis in both eyes, and some limbal edema in both eyes. What would you suggest as a next step for the patient?

#### **Results:**

- At Post-Test, 70% of learners correctly answered: “Refer to an ophthalmologist”





## Overall Educational Impact

- ❖ Significant and substantial improvements (of 159% and 87%) were seen in both learner Knowledge and Competence
  - Post-Test scores of 80% and 75% were measured in Knowledge and Competence, following low (44% and 37%) Pre-Test scores
  - Final scores on Confidence and practice strategy questions were low (2.78 and 3.02), and collected in the Post Curriculum Assessment (PCA). The confidence score (2.78) was measured in learners' reported confidence in ability to integrate evolving targeted therapies into the management of patients with atopic dermatitis suggesting a persistent educational gap. Learners also reported a propensity to utilize targeted treatments when managing patients with atopic dermatitis (3.02).
- ❖ Substantial and significant improvements ranging from 36% to 128% were measured across all six Learning Objectives, from Pre-Test to Post-Test. Post-Test scores remained low on the Objective related to the pathogenesis of AD and role of the Th-2 pathway
  - The highest scoring Learning Objectives at Post-Test addressed clinical presentation, current research data, and recognition of comorbidities for AD

## Overall Educational Impact

- ❖ The analysis of the Knowledge and Competence domains identified two **persistent learning gaps related to immunologic pathways central to the pathophysiology of atopic dermatitis, and to referral of AD patients with ophthalmologic symptoms while taking dupilumab to a specialist**
  - Pre- and Post-Test scores (45% and 62%) were low on a Knowledge item asking learners to identify which of the listed immunologic pathways is central to the pathophysiology of AD
  - Scores were also low (30% at Pre-Test, 70% at Post-Test) on a Competence item presenting the case of an AD patient with ophthalmologic symptoms while on dupilumab, asking whether to modify therapy or refer to a specialist

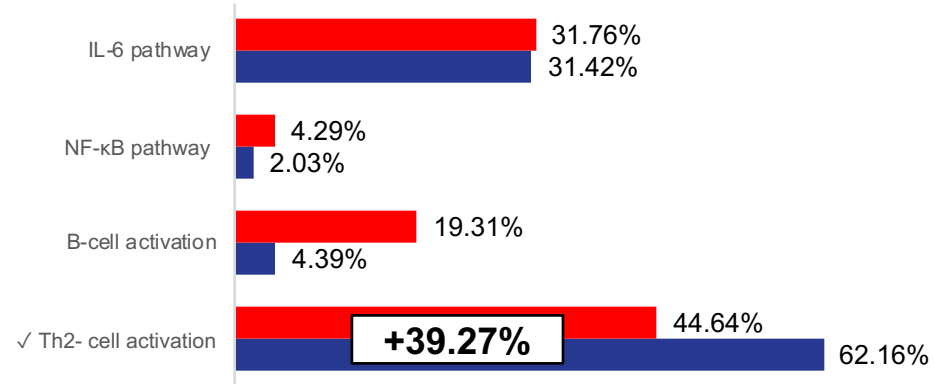
# Appendix

# Knowledge Items

Pre-Test  
Post-Test

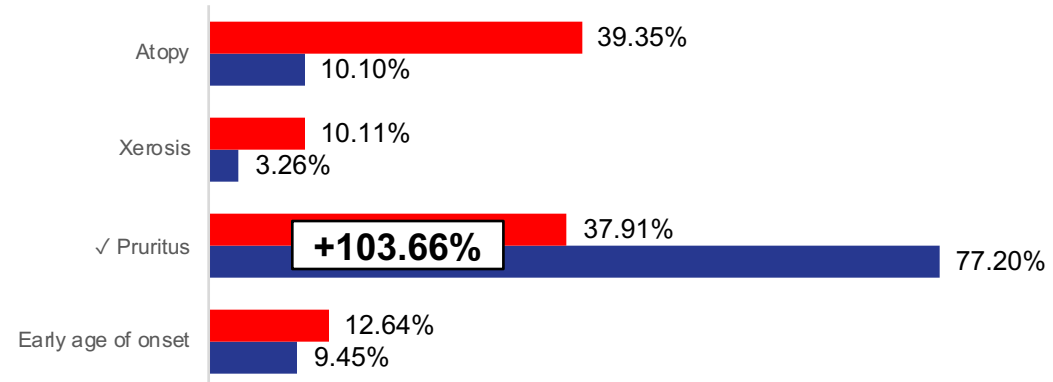
Which of the following immunologic pathways is centrally involved in the pathophysiology of atopic dermatitis?

N = 233 – 296



Which of the following is an essential criterion for a diagnosis of atopic dermatitis?

N = 277 – 307



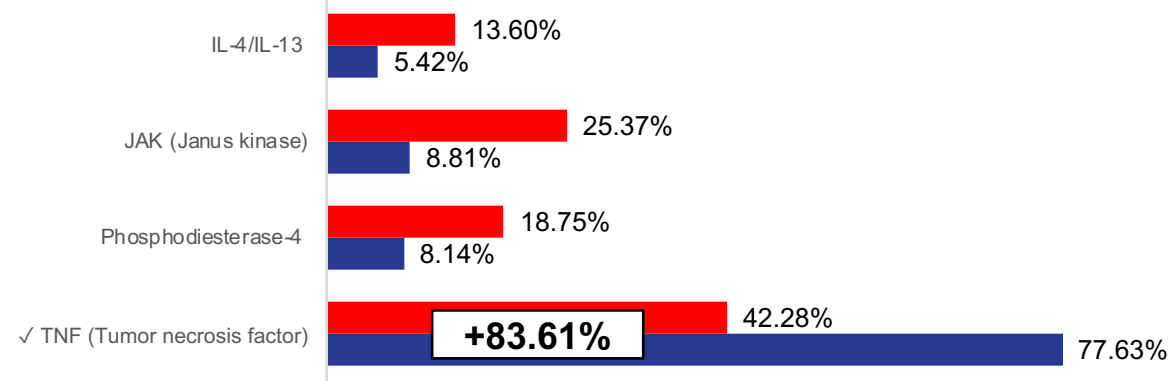
Note: Correct answer is designated by a ✓.

# Knowledge Items

Pre-Test  
Post-Test

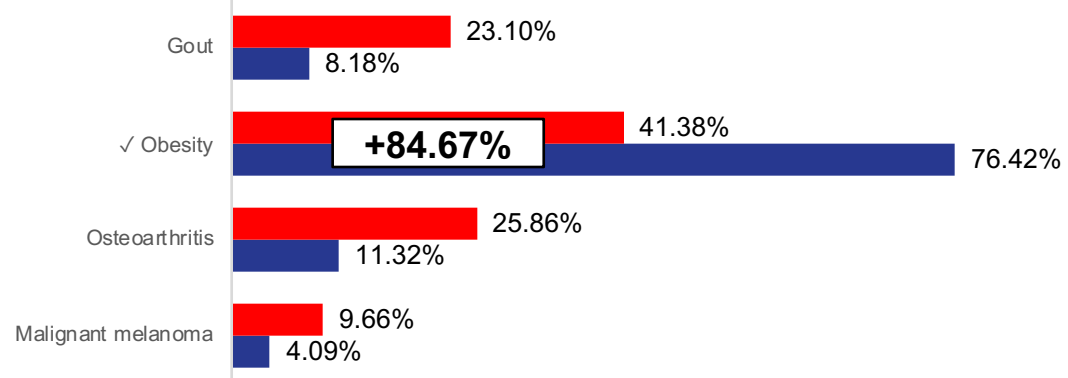
Inhibition of all of the following have been shown to affect the immune response in atopic dermatitis EXCEPT...

N = 272 – 295



Which of the following non-atopic conditions is frequently comorbid with atopic dermatitis?

N = 290 – 318

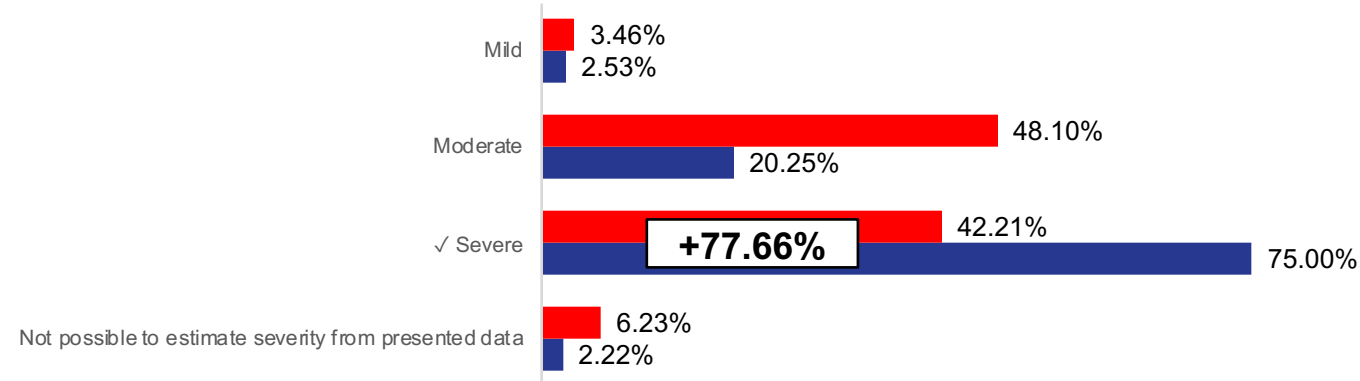


# Competence Items

Pre-Test  
Post-Test

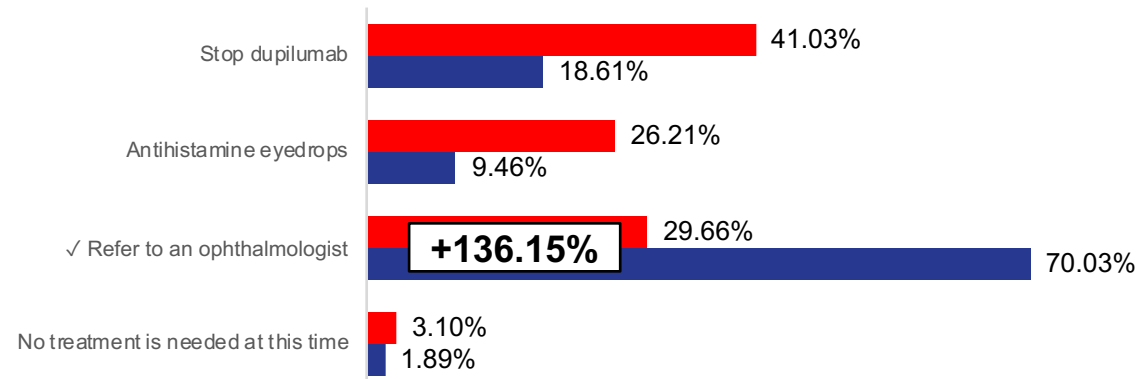
An 18-year-old girl presents with a 7-year history of atopic dermatitis on her face, arms, and abdomen with a dull red appearance with significant elevation and extensive excoriations. The atopic dermatitis persists despite treatment with multiple emollients and prescription medications. She scratches frequently and sometimes does not sleep well due to itching. Using the one palm method, it is estimated that 12% of her body surface area is affected. What is the best estimate of disease severity in this patient?

N = 289 – 316



A 27-year-old man with an 18-year history of AD was prescribed dupilumab for his severe AD. At his 2-month follow-up, he presents with complaints of burning and itching in his eyes. Examination shows moderate conjunctivitis in both eyes, moderate blepharitis in both eyes, and some limbal edema in both eyes. What would you suggest as a next step for the patient?

N = 290 – 317



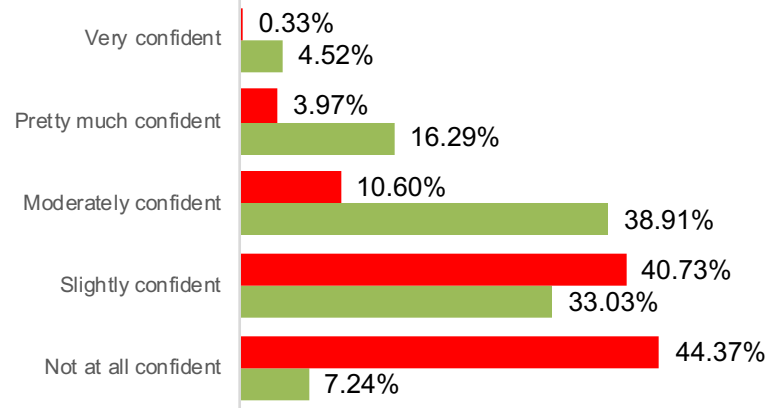
Note: Correct answer is designated by a ✓.

# Confidence and Practice Strategy Items (given at Pre-Test and follow-up)

Pre-Test PCA

How confident are you in your ability to integrate evolving targeted therapies into the management of patients with atopic dermatitis?

N = 221—302



How often do you utilize targeted treatments when managing your patients with atopic dermatitis?

N = 221—294

