



# The PASI-HD Improved Precision in Measuring Disease Severity in Subjects With Mild to Moderate Plaque Psoriasis Treated with Roflumilast Cream, a Phosphodiesterase-4 Inhibitor

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# PASI-HD is a new assessment developed to more precisely measure severity of psoriasis patients in regions where the area of involvement is <10%

**Psoriasis Area and Severity Index (PASI)** is a gold standard measure in psoriasis clinical trials but lacks sensitivity in affected areas <10%

- It does not distinguish disease regardless of severity in cases of low Body Surface Area (BSA)
- Area of involvement of the body region is estimated and given a score. For areas <10%, the score is 1 regardless if the area affected is 1% or 9%

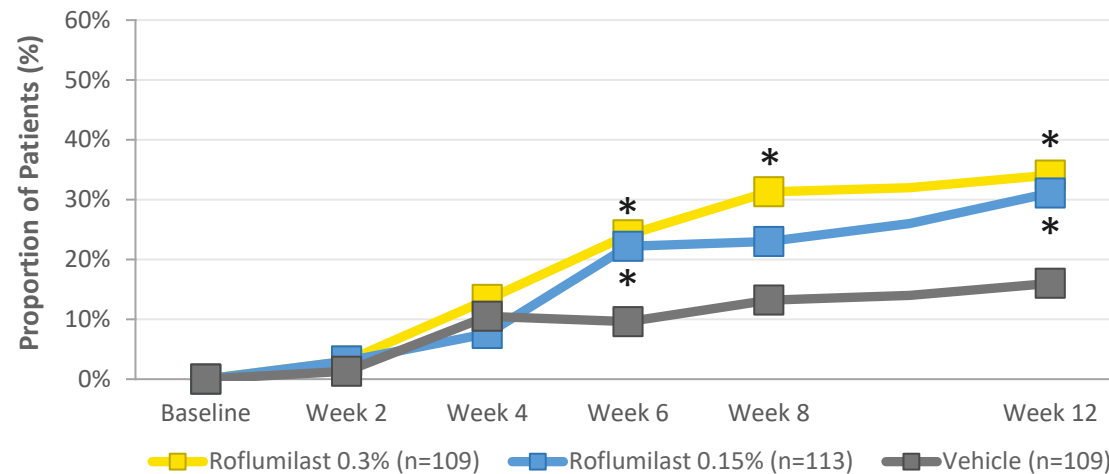
**PASI-HD** is proposed as a modification to the PASI to provide higher discrimination of the effects of treatment in areas with <10% involvement

- Areas of involvement in <10% of the anatomical region are given a score of 0.1 to 0.9 (versus a score of 1 with PASI)
- Areas of involvement >10% of the anatomical region were rated as normal

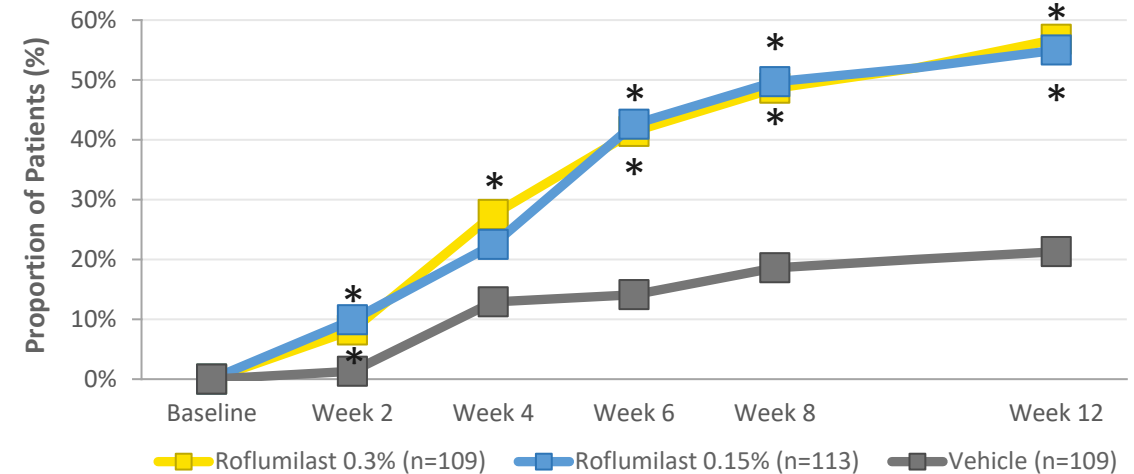
This post-hoc analysis evaluated the precision of PASI-HD by assessing PASI and PASI-HD scores by percent area involvement and severity scores in a randomized, vehicle-controlled, double-blind, phase 2b, 12-week study of once-daily roflumilast cream, a potent, non-steroidal phosphodiesterase-4 (PDE-4) inhibitor<sup>1</sup>

## PASI underestimates the treatment effect in patients where the percent area of involvement is <10%

Proportion of Patients Achieving a PASI-75



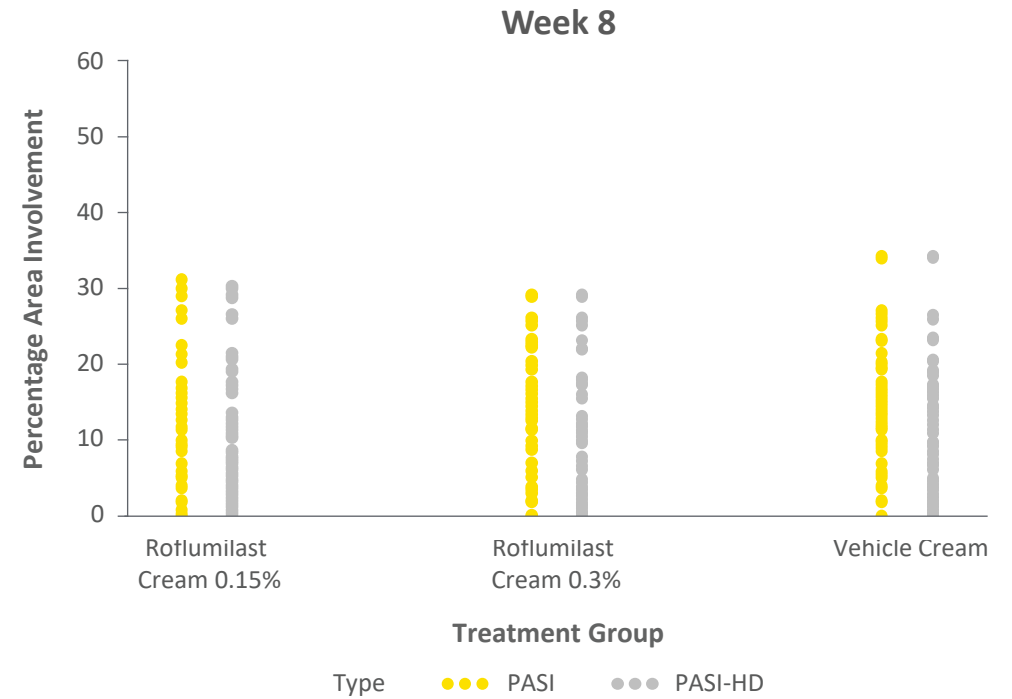
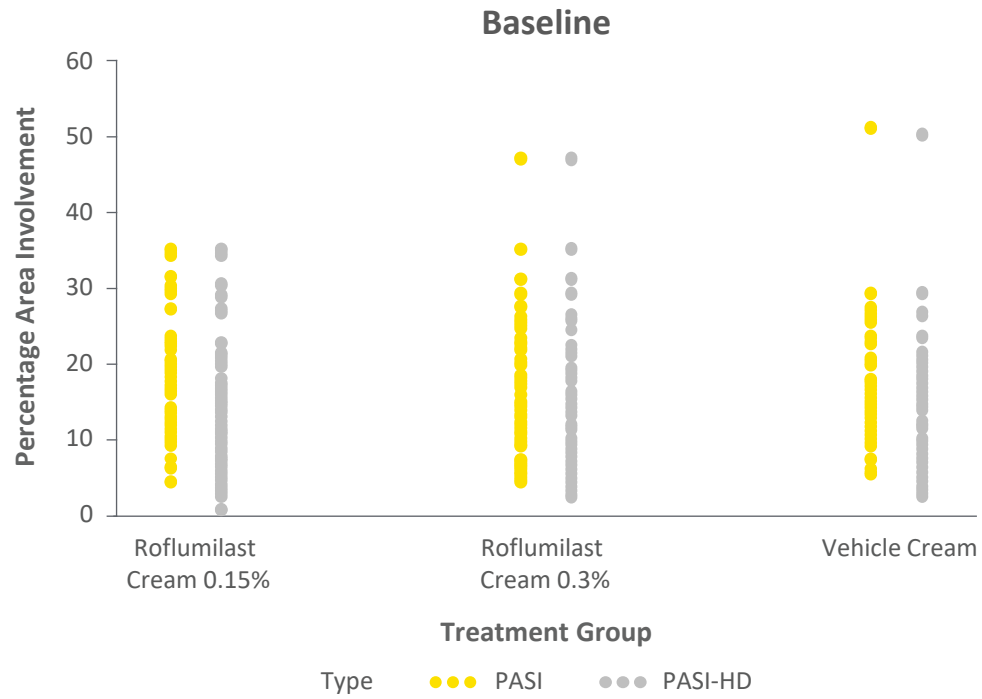
Proportion of Patients Achieving a PASI-HD75



\*P<0.05 vs vehicle. Data are presented for intent-to-treat population. CI: confidence interval; LS: least squares; PASI: Psoriasis Area and Severity Index.

1. Lebwohl MG et al. NEJM 2020;383:229-39

The distribution of scores for PASI-HD is wider and median score lower than PASI representing the more precise measurement where percent area involvement is small



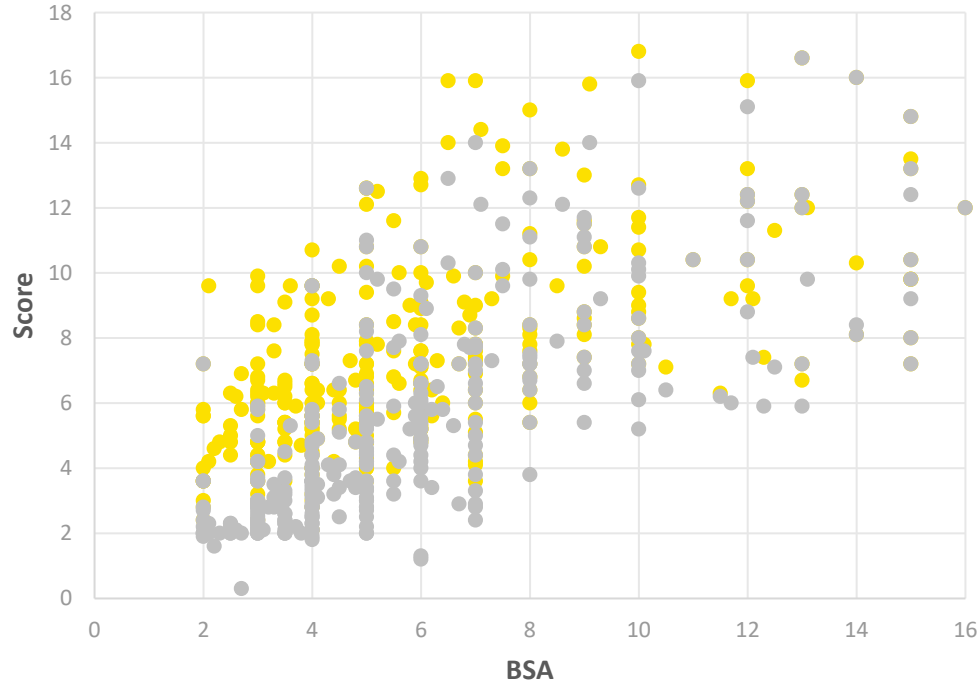
Treatment Group	Measure	n	SD	Median
Roflumilast 0.15%	PASI	113	7.405	12.80
Roflumilast 0.15%	PASI-HD	113	8.447	9.70
Roflumilast 0.3%	PASI	109	7.264	13.60
Roflumilast 0.3%	PASI-HD	109	8.362	10.80
Vehicle	PASI	109	6.525	11.90
Vehicle	PASI-HD	109	7.559	9.00

Treatment Group	Measure	n	SD	Median
Roflumilast 0.15%	PASI	105	5.967	9.00
Roflumilast 0.15%	PASI-HD	105	6.824	2.61
Roflumilast 0.3%	PASI	103	7.083	7.00
Roflumilast 0.3%	PASI-HD	103	7.626	3.00
Vehicle	PASI	90	6.814	10.00
Vehicle	PASI-HD	90	7.469	7.60

Dot Plot of Percent Area Involvement at Each Visit (Intent-to-Treat Population)

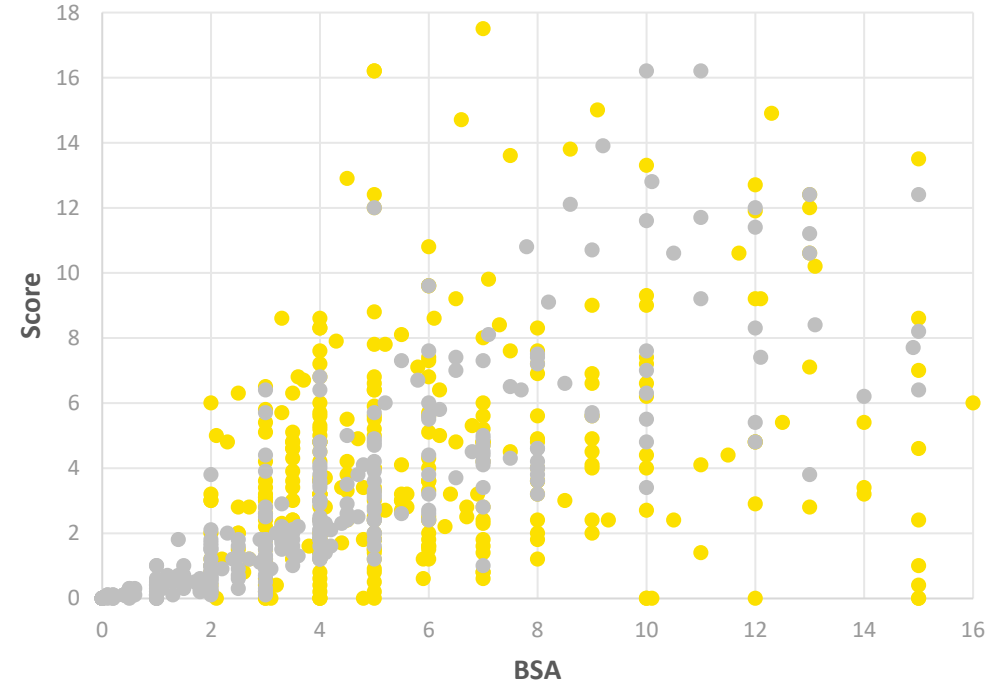
# The PASI-HD is more linear and has a higher correlation with Body Surface Area (BSA) than PASI

Baseline PASI and PASI-HD by Baseline BSA



Measure	Median (min, max)	Spearman Correlation with BSA
PASI	7.1 (2.1, 24.9)	0.66 (p < 0.001)
PASI-HD	5.0 (0.3, 24.9)	0.79 (p < 0.001)

Week 8 PASI and PASI-HD by Week 8 BSA



Measure	Median (min, max)	Spearman Correlation with BSA
PASI	3.6 (0, 17.5)	0.83 (p < 0.001)
PASI-HD	1.8 (0, 16.5)	0.93 (p < 0.001)

The median score was lower and standard deviation higher for PASI-HD as compared to PASI across each domain of PASI (erythema, induration, desquamation) regardless of disease severity.

# Conclusion

- The PASI-HD is more precise as compared to PASI for scoring disease severity in areas of disease involvement <10%
  - The PASI-HD has a higher correlation with BSA and is more linear than PASI
  - The distribution of scores for PASI-HD is wider and median score lower than PASI representing the more precise measurement where percent area involvement is small
- PASI underestimates the treatment effect in patients where the percent area of involvement is <10%
- Most patients with chronic plaque psoriasis have mild to moderate disease, thus a higher level of discrimination for the assessment of severity with PASI-HD is needed to capture disease flaring as well as treatment effects in anatomical regions with <10% involvement