

A Clinical Evaluation of the Anti-Wrinkle Effects of PCCA ExoBlue™

SUMMARY: This study evaluated the effectiveness of PCCA ExoBlue in improving facial wrinkles and overall skin perception in 14 adult female subjects. Over an 8-week period, objective wrinkle measurements were obtained using a 3D imaging system, alongside subjective questionnaire assessments. Results demonstrated that 72% of subjects exhibited measurable wrinkle reduction by week 4, with 21% of subjects showing improvements by week 8. There are greater effects in reducing moderate and deep wrinkles compared to fine lines. Subject-reported outcomes supported instrumental findings, showing improvements in overall skin perception. These findings suggest that ExoBlue has the potential to provide anti-wrinkle benefits.

Introduction:

Fine lines and wrinkles are among the most visible signs of skin aging. Most topical anti-aging formulations primarily focus on hydration, barrier repair or targeting limited signaling pathways for cell proliferation. PCCA ExoBlue is a unique, multi-technology topical system designed not only to support hydration and barrier function, but also to synergistically stimulate cellular communication, promote dermal remodeling and synchronize facial muscle relaxation. This study evaluated both objective and subjective improvements following ExoBlue application over an 8-week period.

Methodology:

Study Design

This 8-week, single-arm pilot clinical study evaluated the anti-wrinkle effects of ExoBlue in healthy adult female subjects aged 40-60 years with facial fine lines and wrinkles. Subjects who met inclusion criteria were enrolled upon provision of informed consent and were instructed to apply ExoBlue twice daily (morning and evening) after cleansing. The use of AHAs, BHAs, vitamin C, other brightening acids and retinoids was not permitted throughout the study duration. Subjects were evaluated before, after 4 weeks and after 8 weeks of using ExoBlue.

Objective Measurements

Wrinkle assessments were performed using the EvaFACE S5-3D imaging system at baseline, week 4 and week 8. This non-contact optical system quantitatively measures skin topography and classifies wrinkles into three categories based on depth: fine lines (Class 1: -0.021 to -0.062 mm), moderate wrinkles (Class 2: -0.062 to -0.123 mm) and deep wrinkles (Class 3: -0.123 to -0.756 mm).

Subjective Measurements

Subjective effectiveness was evaluated using a structured questionnaire at week 4 and week 8, assessing multiple domains of skin appearance and feel using a 5-point Likert scale (strongly disagree to strongly agree).

Results and Discussion:

Fourteen subjects were enrolled and all completed the study without dropouts or reported adverse events.

The EvaFACE S5-3D imaging analysis showed measurable wrinkle reductions in 13 of 14 subjects, with the greatest improvement observed in moderate and deep wrinkles. By week 4, 72% of subjects demonstrated early response, with reductions in moderate wrinkles up to 55.7% and deep wrinkles up to 65.3% in individual cases (Figure 1). These early responses suggest a relatively rapid onset of action. Additional improvements were observed in 21% of subjects by week 8, while one subject showed no measurable response (Figure 2).

Across the cohort, the use of ExoBlue is associated with greater effect in reducing moderate and deep wrinkles compared to fine lines. This pattern implies that the formulation may exert effects beyond superficial hydration, potentially influencing dermal structure or skin elasticity. Variability in response magnitude and timing was observed among subjects, which may reflect differences in baseline skin condition, intrinsic aging processes or individual variability in product response.

Subject-reported outcomes were consistent with instrumental findings and showed a clear trend of progressive improvement in skin perceptions over time. At week 4, moderate improvements with a composite 80.2% positive responses were observed across questionnaire domains, and with a shift toward 87% positive responses by week 8. The overall questionnaire results at the end of the study are summarized in Figure 3.

Overall, the consistency between objective 3D imaging measurements and subject-reported outcomes supports the reliability and clinical relevance of the findings. The high responder rate and progressive improvement profile indicate that ExoBlue is a promising topical system for signs of skin aging.

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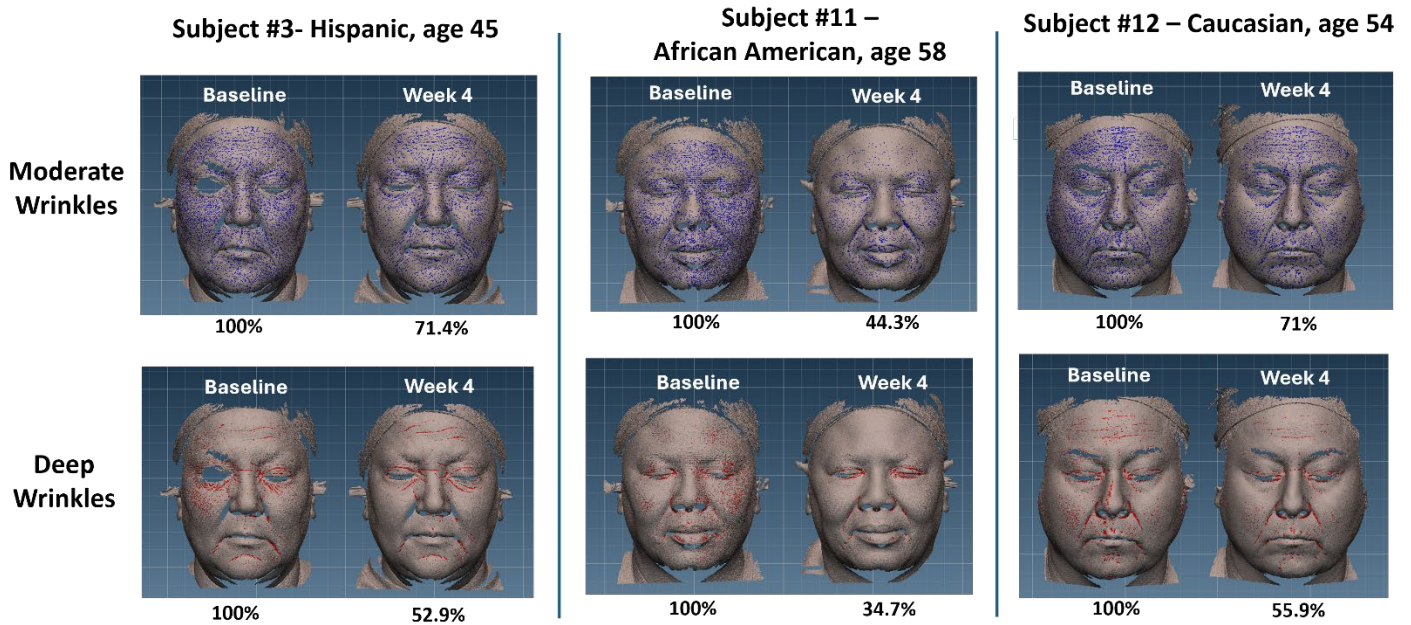


Figure 1. Representative 3D imaging of wrinkle reduction in 3 subjects following ExoBlue use for 4 weeks. In the 3D scans, moderate wrinkle areas are labeled with blue color and deep wrinkle areas are labeled with red color.

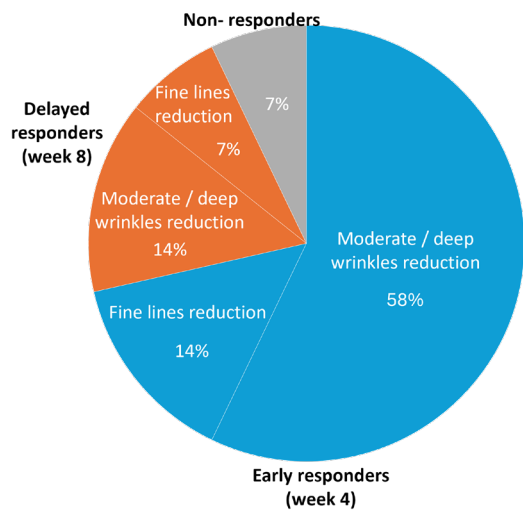


Figure 2. Distribution of treatment responses among subjects.

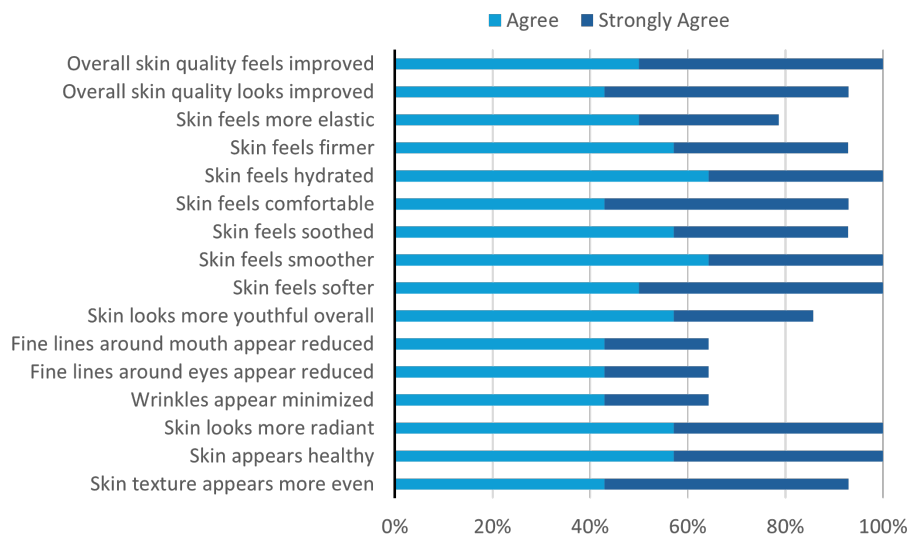


Figure 3. Subject-reported outcomes following 8 weeks' use of ExoBlue.