A RANDOMIZED COMPARATIVE STUDY ON MELASMA DURING SUMMER WITH A VISIBLE LIGHT-PROTECTING SUNSCREEN VERSUS A STANDARD SUNSCREEN

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OVERVIEW

The purpose of this study was to compare a sunscreen containing photoprotection against visible light (a tinted product) to a non tinted sunscreen in the prevention of melasma relapse on 42 melasma women during five months (May to October in Nice, France) upon three follow-up visits. At each visit colorimetric measurements of skin lightness, pigmentation and homogeneity were performed by comparing a melasma area and an uninvolved area using standardized photographs. A clinical evaluation of melasma using mMASI score was also performed by a dermatologist. At the end of the study, the skin pigmentation, lightness and homogeneity were significantly improved with the tinted product compared to non-tinted. mMASI score showed a significant decreased after five months.

INTRODUCTION

Melasma is a common hyperpigmentation skin disorder, characterized by relapse due to sun exposure. Ultraviolet (UV) radiation is the main cause of skin pigmentation, but more recently, visible light has been identified as an important contributor. Therefore, sunscreens protecting against UVA, UVB and visible light are key in melasma prevention, but few comparative studies have been conducted. The aim of the study was to compare a sunscreen containing photoprotection against visible light (tinted product) to a non-tinted sunscreen in the prevention of melasma relapse, using instrumental and clinical assessments.

RESULTS

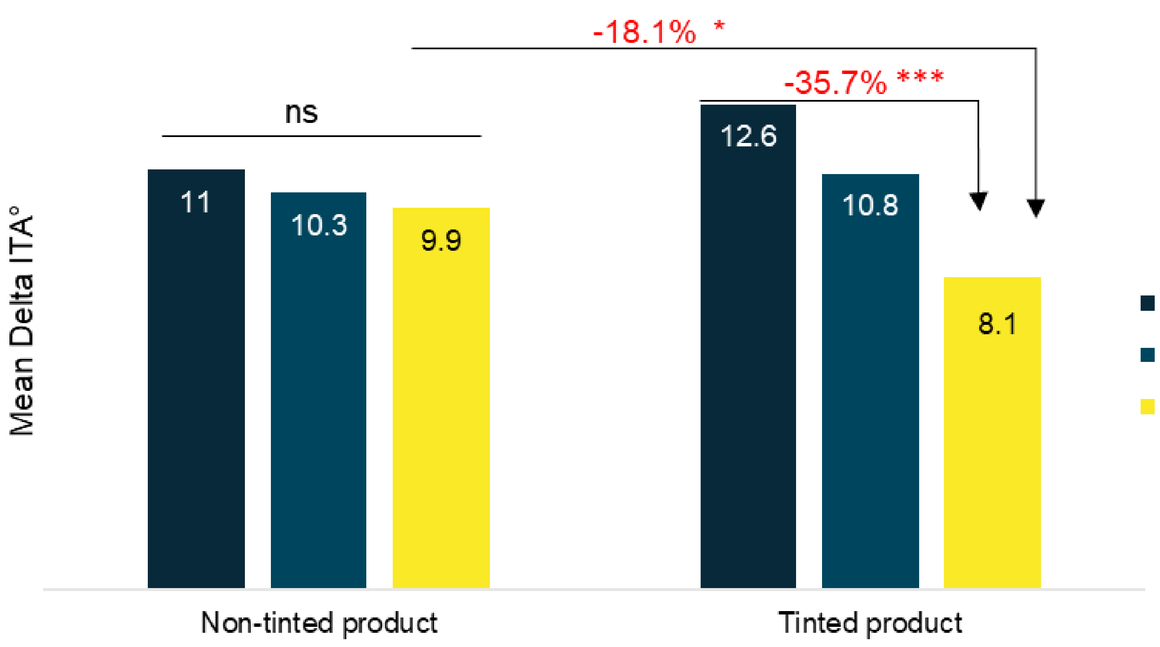

Figure 1: *Mean of ΔITA° (skin pigmentation):* difference between melasma and the surrounding area was **significantly reduced** in the tinted sunscreen group when compared to non tinted sunscreen. For each group, a **significant improvement** was observed in the tinted sunscreen after 5 months of use when compared to day 1.

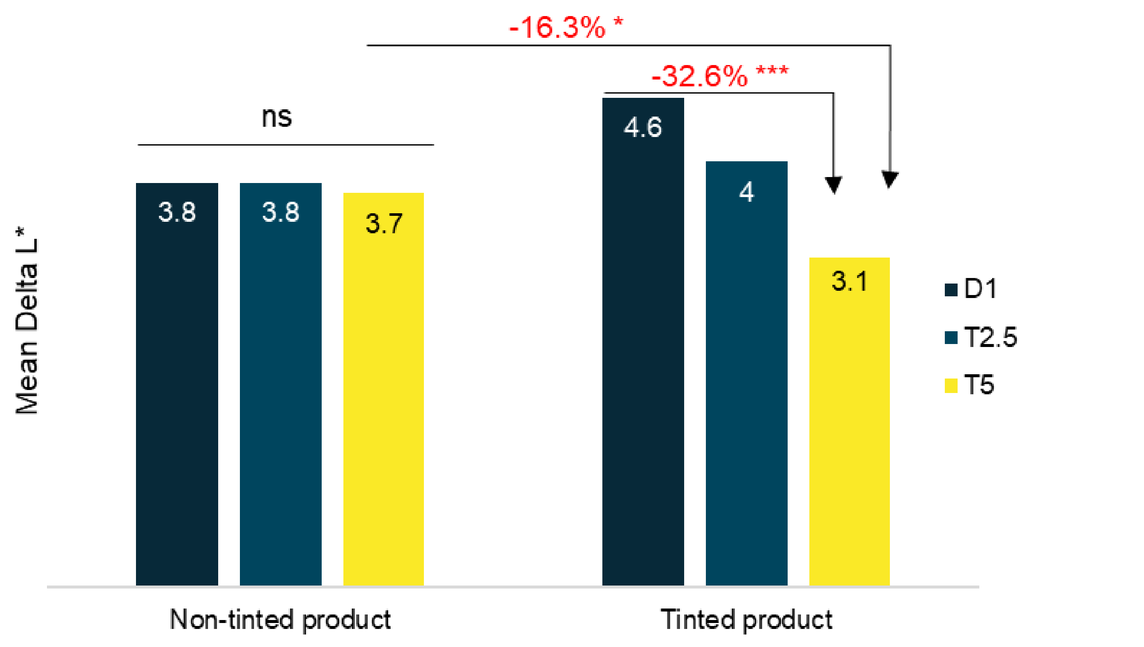

Figure 2: *Mean of ΔL* (skin lightness):* difference between melasma and the surrounding area was **significantly reduced** for the tinted sunscreen when compared to non tinted sunscreen. For each group, a **significant improvement** was observed in the tinted sunscreen after 5 months of use when compared to day 1.

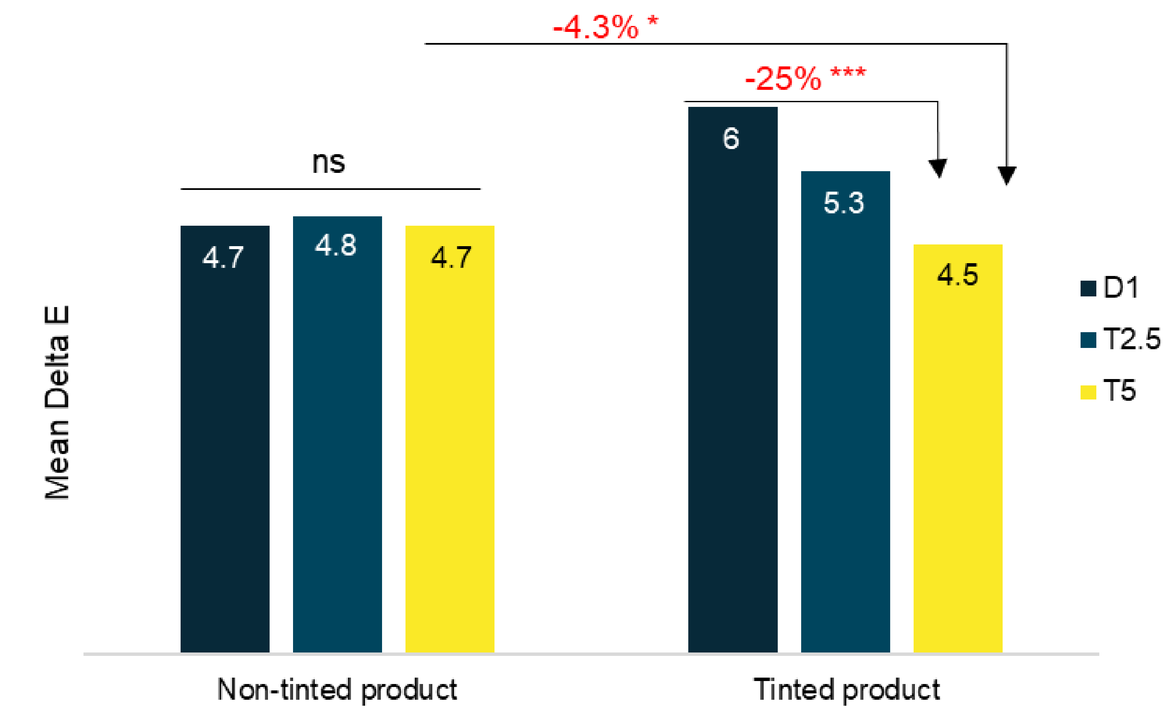

Figure 3: *Mean of ΔE parameter (skin homogeneity):* difference between melasma and the surrounding area was **significantly reduced** in the tinted sunscreen group when compared to non tinted sunscreen. For each group, a **significant improvement** was observed in the tinted sunscreen after 5 months of use, compared to day 1.

Figure 4: *Photographs of subject #30 at each visit who applied the tinted product*

- The application of the tinted sunscreen showed a significant reduction in the mMASI score of **12.5%***** (3.5 vs. 4 at D1) after 5 months (***Figure 4***). No significant differences were however observed between the two products.

**p<0.05 between groups, Student's t test, ***: p<0.001 compared to D1, Dunnett adjustment*

CONCLUSION

This study showed that even in summer, the use of a sunscreen with very high UVB and UVA photoprotection reduces melasma severity. And more interestingly, addition of visible light protection via an adapted tinted sunscreen significantly reduces melasma-related scores and thus prevented melasma relapses that are so recurring during summertime.