

# Sunscreen stick SPF70 improves global skin conditions on subjects with moderate to severe facial hyperpigmentation

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## INTRODUCTION

Skin discoloration is a common concern with limited treatment options for multi-ethnic patients<sup>1</sup>. Combination therapy with sunscreen has been shown to be more effective in addressing hyperpigmentation<sup>2</sup>. However, the most effective galenic form sunscreen have been minimally investigated.

Sunscreen stick could be suggested to be used in patients with hyperpigmentation due to ease of application, resistant and cohesive protective film forming and high-water resistance. Also, the film forming by the sticks could have a positive impact in quality of life of patients due to immediately coverage of imperfections, when developed with iron oxide pigments<sup>3</sup>.

## OBJECTIVE

The aim of this study was to evaluate the efficacy of sunscreen stick SPF70 formulation containing iron oxides, sodium hyaluronate and vitamin E for the improvement of skin conditions in patients with moderate to severe facial hyperpigmentation.

## METHODS

Twenty subjects with moderate to severe hyperpigmentation (melasma and post inflammatory hyperpigmentation) were included in the study and applied the sunscreen stick SPF70 twice a day for 30 days.

Clinical assessments were made at the beginning and after 30 days of treatment, including global improvement in hyperpigmentation by standardizes digital photographs, subject's self-questionnaire for quality of life<sup>4</sup> and reflectance confocal microscopy (RCM).

## CONCLUSION

This study demonstrate the benefits of daily use sunscreen stick FPS70 in monotherapy to improve skin hyperpigmentation. The stick galenic form may be suggested as the most appropriate sun protection for patients with mild to severe hyperpigmentation also in combination therapy to improve skin conditions and patients quality of life.

## RESULTS

The self-questionnaire for quality of life (MelasQoL<sup>4</sup>) before treatment showed a negative impact of hyperpigmentation on skin appearance, frustration, embarrassment and sensation of not being attractive to others. After first application it was observed an improvement on subjects' quality of life due to the high coverage provided by the iron oxide pigments and the film provided by the stick formula that contains higher concentrations of waxes<sup>5</sup> (Table 1).

Table 1.: Results for mean question of the MelasQoL before and after treatment (p<0,01 Wilcoxon)

	% of Volunteers that bothered all the time	
	T0	T1
Skin appearance	44	4
Frustration	30	5
Embarrassment	28	4
Sensation of not being attractive to others	27	5

It was demonstrated that RCM methodology could be an effective tool to evaluate whitening efficacy of products, once it could be evidenced for example characteristic patterns for melasma.

Evaluation results showed a significant reduction on skin hyperpigmentation since the first application (Figures 1) showing that the combination of high sun protection factor, long wavelength UVA protection, visible light and infrared radiation protection with high coverage and high-water resistance are associated with the effectiveness of the sunscreen stick. Also, the association of sodium hyaluronate and stable vitamin E to the sunscreen could have a positive impact in the improvement of skin quality and reduction of hyperpigmentation in long term results.



Fig. 1.: Effect Stick FPS70 on significant spots reduction after a single application (T1) compared with baseline values (T0) (\*p <0.05, T test).