

# "Objective and Subjective Changes to Young Skin Appearance during a Six Hour Period of the Working Day"

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## INTRODUCTION

It has been previously reported that facial clinical signs change during the working day<sup>1</sup>. In younger subjects this was observed as an increase in severity of nasolabial and crows' feet wrinkles. It has also been widely reported that skincare consumers are becoming younger<sup>2</sup>. In this pilot study we aimed to evaluate the impact of a working day on the facial skin of a young cohort of females, both objectively and subjectively. This data would then be used to inform the development of science backed, efficacious skincare products focussed on maintaining or improving the skin of young females.

## MATERIALS & METHODS

Informed consent was taken from 9 female subjects aged below 35 years of age. Subjects were not allowed to wear make-up on the day of the study and were acclimatised for 30 minutes prior to the collection of images of the front and both sides of the face using the Visia® facial imaging device. This procedure was repeated 6 hours later. At both time points subjects filled in a self-evaluation questionnaire to assess the state of their skin. At the end of the study the images were processed using the Visia® software which gives an objective analysis of 8 parameters linked to skin appearance<sup>3</sup>. The data from the self-assessment study was collated in Excel. Statistical analysis was conducted to determine which factors had significantly changed during the period of the study.

## RESULTS

Parameter	Left	Right	Front On
Spot FC		X	X
Wrinkle FC			X
Texture FC			X
Spot Sc		X	
Wrinkle Sc	X		X
Texture Sc	X		
Brown Sc		X	
FC = Feature Count			
SC = Score			
X = p value <0.05			

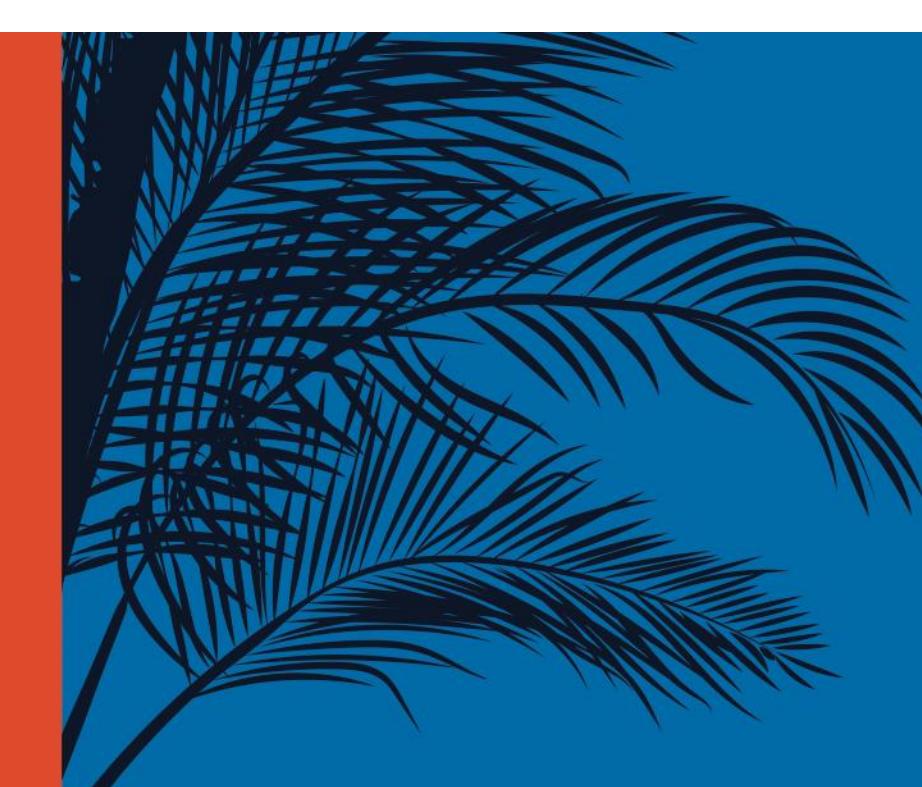
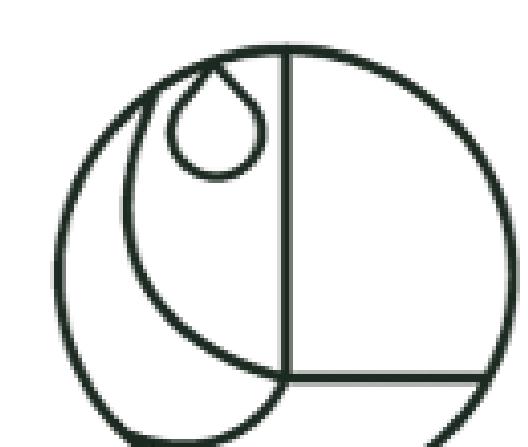
Table 1 – Visia® Analysis Data showing significant changes in score values between the start and end of the study.

For the self-assessment data there were no significant differences between the two time points across all questions. A general trend in scores indicated that the skin appearance was scored lower at the end of the study than at the start. The highest change in score was for the question "My skin appears tired."

## CONCLUSION

The skin of young, normal, healthy females, as recruited for this study, is characterised as being relatively blemish free with smooth texture and few, if any, visible wrinkles and pores. The Visia® imaging device was unable to detect high levels across any of the 8 parameters it is set up to analyse. This is unsurprising as the levels of eg skin wrinkles would be expected to be zero or very low for a cohort of this age range. However, there was still sufficient change, particularly in the front on view, for the device to detect significant differences in the textural properties of the skin. Self-assessment data indicates that any changes in the skin during the day were minimal and below the level of significance. Typically, outside of facial blemishes and acne, the skin of young subjects has a very healthy appearance. Skincare products which are to be aimed at this age group should be focussed on protecting the skin from damage to exposome factors (UV, pollution etc.) and should carry messages around how a healthy lifestyle can prolong youthfulness of the skin. This study indicates that high levels of active ingredients in daily skincare are not necessary as the changes within the skin are minimal during working hours. When testing products on young skin for claims there should be a focus on clear skin with a natural radiance and glow and the use of self-assessment and expert assessment techniques. The use of a daily moisturiser with SPF can be recommended and will help to overcome the textural changes observed in this study and ensure the optics of the skin remain optimal.

1. Flament, F., Pierre, J., Delhommeau, K. and Adam, A.S. (2017), How a working day-induced-tiredness may alter some facial signs in differently-aged Caucasian women. Int J Cosmet Sci, 39: 467-475.
2. Parikh AK, Lipner SR. Glow or No-Go: Ethical considerations of adolescent and teen skincare trends in social media. Skin Res Technol. 2024 Aug;30(8):e70029. doi: 10.1111/srt.70029. PMID: 39185758; PMCID: PMC11345696.
3. <https://www.canfieldsci.com/imaging-systems/visia-complexion-analysis/>



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