

DAMAGE OF THE OCULAR SURFACE FROM INDOOR SUNTANNING – INSIGHTS FROM IN VIVO CONFOCAL MICROSCOPY

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Purpose: To evaluate the ocular surface at the microstructural level of habitual indoor-suntanning subjects utilising in vivo confocal microscopy.

Methods: Participants were prospectively recruited and enrolled into either a study group (n = 75) with a history UV indoor tanning, or a control group (n = 75) with no prior history of artificial tanning. The study group participated in voluntary tanning sessions performed with standard equipment and maintained their usual routine for eye protection. Slit lamp biomicroscopy and in vivo confocal microscopy were performed at baseline before undertaking a series of suntanning sessions (10 sessions of 10 minutes duration over a 15 day period), within three days after the last session, and four weeks after the last session. Control group participants were examined at baseline and 8 weeks later and did not participate in tanning sessions.

Results: All participants were female with a mean age of 25 ± 4.3 years and 24 ± 3.7 years in the study and control groups, respectively. No clinically significant changes were observed in either group over time (all $p \geq 0.05$), however, statistically significant differences were observed between the study and the control group for all corneal layers (all $p \leq 0.03$). Characteristic cystic conjunctival lesions with dark centres and bright borders were observed in 95% of the study group before and in 100% of eyes after the suntanning sessions.

Conclusion: Indoor suntanning leads to statistically significant microstructural changes in the cornea and the bulbar conjunctiva that are undetectable with slit lamp biomicroscopy.