Conjunctival UV Autofluorescence in Eye Care Practitioners

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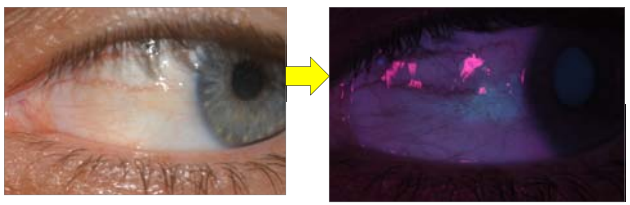
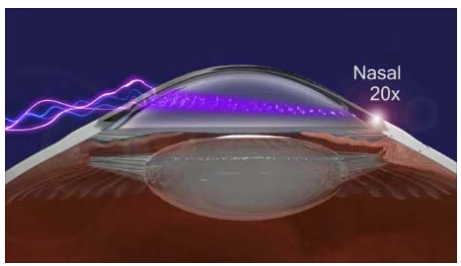
Purpose

Autofluorescence of UltraViolet (UV) light from the conjunctiva highlights early damage not always seen in white light, occurring in localised areas, and can be present from a young age which map to active cellular changes due to UV and environmental exposure.

Methods

- 307 eyecare practitioners (ECPs) from Czech Republic, Germany, Greece, Kuwait, Netherlands, Sweden, Switzerland, UAE & UK attending education events in 2012-3
- Age 38.5 years ± 12.3 (range 19-68), 40% male
- Right eyes imaged nasally & temporally using a Nikon D100 camera and dual flash units through UV filters, as described by Coroneo (Ooi et al., 2006)
- UV autofluorescence outlined using Image J software
- Demographics & lifestyle recorded via questionnaire with drop down menu



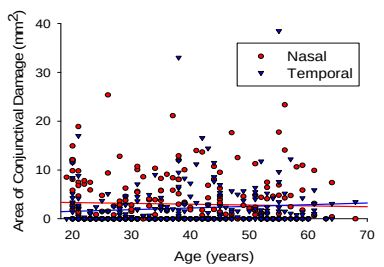


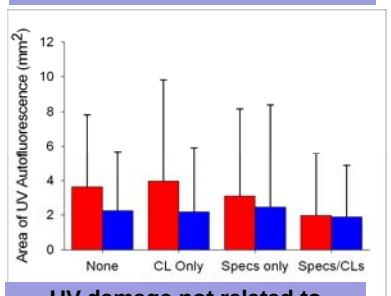
Check today's UV intensity in Manchester

Results

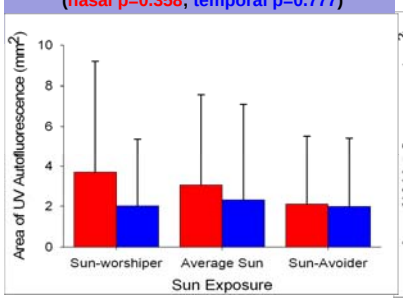
- 62% had some conjunctival damage indicated by UV autofluorescence
- Larger area (p = 0.005) nasally (2.95±4.52 mm^2) than temporally (2.19±4.17 mm^2)

UV damage greater nasally with none vs CL/specs
(nasal p = 0.011,temporal p=0.958)

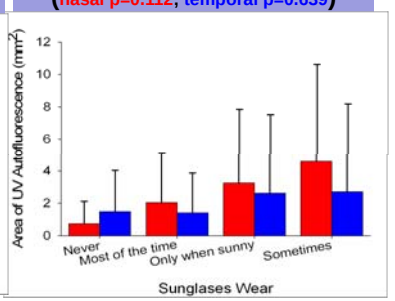




UV damage not related to sun exposure
(nasal p=0.358; temporal p=0.777)



UV damage not related to sunglasses usage
(nasal p=0.112; temporal p=0.639)



Conclusion

- UV conjunctival damage common even in Europe and Middle East amongst ECPs - hence importance of recommending comprehensive UV protection of wide brimmed hat, sunglasses and UV blocking CLs
- Greater damage nasally explained by peripheral light focusing effect

Reference::
Ooi J-L et al., Ultraviolet fluorescence photography to detect early sun damage in the eyes of school-aged children. Am J Ophthalmol 2006;141:294-8.

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