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Title:

Does ethnicity and foveal morphology play a role in the spatial distribution of macular pigment?

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Abstract

While macular pigment optical density typically follows an exponential decline with eccentricity from the fovea, *atypical* profiles have also been described, including reports of increased prevalence of ring-like and central dip profiles among non-white ethnicities. However, classification of macular pigment (MP) profile phenotypes varies and is often based on subjective visualisation. We present data showing that compared to visual assessment, objective MP profiling (taking into account measurement repeatability) is a more reliable method that should be considered in future observational and interventional studies. We will also describe ethnic variations in MP spatial distribution (among white, black and South Asian individuals) in relation to variations in foveal architecture, including data regarding individual retinal layers, foveal width and pit slope taken from SD-OCT images. Our data suggests that although ethnicity explains around 10% of the variance in MP profile, gender plays no significant role. In addition, although white subjects demonstrate thicker retinal layers than non-whites, the significant differences in the amount and distribution of MP between ethnicities is not explained by variations in foveal morphology.