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Aim: Melanopsin has been implicated in adapting visual circuits for daylight vision. Here we examine the distribution, autofluorescence and retinal connectivity of melanopsin positive retinal ganglion cells (mRGC) in the human macula, a region specialised for high acuity daylight vision. **Methods**: Adult human maculae (n=5) were processed for melanopsin immunofluorescence staining, with one specimen also stained for the dopaminergic amacrine cell marker tyrosine hydroxylase. The regional distribution, size, staining intensity and autofluorescent status of mRGC were quantified from confocal microscope images. **Results**: Overall, the highest density of melanopsin cells was found in inferior macula, the majority of these cells residing in the RGC layer. The proportion of somas located in the inner nuclear layer (INL) was: inferior (35%), superior (44%), nasal (27%) and temporal (53%), with mRGC in the INL of inferior retina exhibiting the largest soma diameters and most intense melanopsin staining. Autofluorescent deposits occurred in both melanopsin negative cells, which were more common in the RGC layer and mRGC, which were more common in the INL of inferior and temporal macula regions. We also found evidence of mRGC axon collaterals and direct contact between melanopsin neurites and the somas of dopaminergic amacrine cells. **Conclusions**: Our anatomical data helps explain physiological findings that inferior retinal light exposure is most effective in suppressing melatonin in humans (Glickman et al., 2003) and suggests a regional variation in any ability of melanopsin to modulate macula retinal function. Autofluorescence in mRGC may reflect the accumulation of potentially toxic lipofuscin-like deposits in these cells.