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Contrast Response Functions of ON- and OFF-Cells in Motion-Induced Blindness

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Contrast Response Functions of ON- and OFF-Cells in Motion-Induced Blindness

By Megan E. Lusignan

Abstact

Motion-Induced Blindness (MIB) is the perceived, spontaneous disappearance of a salient target when it is viewed in the presence of a moving mask, and is believed to be controlled by extrastriate area 5 (Donner et al., 2008). The ON and OFF pathways in the human visual system are responsible for the detection of increments and decrements of light, respectively. The OFF pathway is more sensitive to decrements than the ON pathway is to increments before the middle layers of V1. However, after this point, the sensitivities are comparable in strength. Past experiments in this lab have shown that the ON and OFF pathways retain some differences past V1. The purpose of this study was to further examine the asymmetries between the ON and OFF cell pathways by measuring the perceived MIB under different increment/decrement conditions. This was done by varying the luminance of the mask and target between increments and decrements, with 6 different possible combinations, and measuring the perceived disappearance of the target. Results have shown that decrement targets are harder to mask than increment targets.