The effect of migraine diagnosis upon pupil responses to illusory brightness
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Introduction
Research Questions:
• Do stimuli with illusory brightness cause increased pupil constriction in comparison to equi-luminant stimuli with no illusory properties?
• Do people with migraine with aura (MwA) have a larger pupil response to illusory brightness than migraine without aura (MwoA) and headache free (HaF) populations?

Methods
Stimuli:
The radial stimulus had an equivalent center and a varying surround. Each stimulus had the same calculated integrated luminance, which was slightly higher than the overall screen background of the half on settings. The annular surround was located between 3.4 and 9 degrees of visual angle. Subjects were presented with one stimulus a time at a 0.5 s intervals.

Subjects:
Gordor MwoA MwA HaF
Gender 11F/4M 12F/3M 9F/3M 8F/3M
Age 32 32 32 32

Results

Conclusions
• We replicate the finding of larger pupil responses to stimuli with illusory brightness, although our study cannot exclude the possibility that spatial structure alone is sufficient to produce this effect.
• We did not find evidence that people with migraine have a different pupil response to illusory brightness.
• Further work in this area would benefit from a measure of perceptual sensitivity to illusory brightness in these groups, and a measure of test / retest reliability of individual differences in pupil response.

References