Assessing Relative Rod, Cone and Melanopsin Contributions to Pupil Flicker Responses

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Purpose

• To determine the relative rod, cone and melanopsin contributions to human pupillary light responses using flickering stimuli at mesopic light levels, where rods and cones work simultaneously.

Methods

15 min. 2 min. 30 sec. 1 min.

Dark adaptation Background adaptation Stimulus ISI

RESULTS: Pupil response trace
RESULTS: “Rod stimuli” & “Cone stimuli”

RESULTS: “Combined stimuli”

Model: Vectorial summation

Model parameter summary
Conclusions

- At mesopic levels, inputs from rods, cones and melanopsin are combined in a vector sum fashion to control the pupil size. The relative contribution of these inputs depends on mean luminance level of the flickering stimuli.

Thank you!

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