

Light Sensitivity and Dry Eye Syndrome

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Hypothesis

We hypothesize that most people with Dry Eye Syndrome (DES) are light sensitive, often to a degree that affects their ability to use bright light as an intervention for vision loss.

Purpose

We report a preliminary study to investigate the prevalence and magnitude of light sensitivity among people with DES. DES is reported to affect 15-33% of people over 50 and is likely prevalent among those with low vision, many of whom would benefit from higher light intensity for near visual tasks.

Methods

Patients at a dry eye clinic were presented a LuxIQ™ over a Colenbrander 40 cm eye chart in a room with subdued background light (<200 lux). They were asked to adjust the intensity of 4500°K white light to their maximum level of comfort. The sample size was 15 (14 female, 1 male, aged 34 – 68).

Results

The mean chosen illuminance is 1487 ± 954 lux. 9 patients tolerated ≤ 1000 lux, and three tolerated 500 lux. After treatment, the tolerance for four patients rose to a mean of 3750 lux. While no normals were measured, other studies have suggested the normal level is in the range of 3000-4000 lux, 1-2 standard deviations above the mean in this study.

Conclusions

This preliminary study suggests many with DES are light sensitive, and would have difficulty tolerating light levels that maximize visual performance for AMD (≥ 2000 lux). Treatment appears to increase tolerance in at least some cases. If this is true, it may be beneficial to evaluate patients for DES and provide treatment as part of a rehabilitation program that uses improved lighting. We are currently conducting a more extensive IRB-approved study, and plan to have additional data for the conference.

Support

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Disclosure

Dr. Harvey Fishman has no financial interest in this work. Peter Borden and Michele Klein are employees of Jasper Ridge Inc.

Figure 1: Light tolerance (lux) for 15 patients with DED.

