

## ✓ The Light Damage Could Be to Reduce with a Blue Filters Without Affected to Functionality of Photosensitive Ganglion Cells

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**Purpose:** Blue light has been shown to induce a retinal damage in retina, which determines significant decrease of retinal light responses. Nevertheless, maximum sensitivity of intrinsically photosensitive ganglion cells (ipRGCs) also range in the blue spectrum. We have tested the protective effect of light filters in the 400 – 500 wavelength range on light sensitivity and also we have observed if blue filters may also affect the circadian activity.

**Methods:** Light damage was induced in experimental mice by the use of 7 days of continuous white light of high intensity (5000 lux). Flash electroretinogram responses were recorded under light and dark adaptation in all. Similar experiments were performed in a second series of animals after filtering the damaging light with sort wavelength light filters. Circadian Activity of albino and pigmented mice were tested by the use of wheel activity cages. In a final series of experiments, we employed the circadian activity in Rd10 mice.

**Results:** Our experiments show that blue filters permit a significant reduction of the light induced retinal damage in albino mice. No effect of the blue filter was observed in pigmented mice. By the use of the different mouse models, we observed that ipRGC