

Effect of a polarized on photopic contrast sensitivity and disability glare

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Purpose To establish the effect of a solar polarized filter on photopic contrast sensitivity (CS) determined with and without glare and on disability glare.

Methods Natural sunlight is partly polarized and polarized filters are the only way capable of blocking the glare produced by reflection. Other types of solar filters only reduce the level of luminance. CS with and without glare were determined using the CGT 1000 (6 stimulus sizes –6.3 to 0.7 degrees; 12 levels of contrast –0.01 to 0.45; 8 peripheral glare sources) at photopic luminance level and under different conditions: without filter (to avoid the patient learning effect) or using a graphite or polarized filter on an alternating basis. The study sample was comprised of 82 subjects aged 18 to 95 (56± 21) years.

Results Differences in disability glare were recorded for intermediate stimulus sizes between both filters. Differences statistically significant in disability glare according to the filter versus without filter were recorded for intermediate stimulus sizes. CS values for intermediate stimulus determined in the presence of glare differed significantly when comparing the use of no filter versus both filters, or between both filters with glare.

Conclusion The use of solar filters improves CS for intermediate stimulus sizes, being highest values using the polarized filter