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Service (sector) Glaucoma N° CEP

Short-Wavelength and Standard Automated Perimetries alterations with the use of a blue light spectrum filter

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Purpose: To evaluate the influence of a blue light spectrum filter (BLSF), similar in light spectrum transmittance to the intraocular lens Acrysof Natural®, on standard automated perimetry (SAP) and short-wavelength automated perimetry (SWAP). **Methods:** Twenty healthy individuals (twenty eyes) underwent a random sequence of four Humphrey visual field tests: SAP and SWAP with and without a BLSF. All patients had intraocular pressure lower than 21 mmHg, normal fundus biomicroscopy, and no lens opacity. Foveal threshold (FT), mean deviation (MD), and pattern standard deviation (PSD) indexes obtained from the visual field tests and the difference caused by eccentricity in SWAP exams were analyzed using paired *t* test. Inter-individual variability (standard deviation) was calculated using Pitman's test for correlated samples. **Results:** Reductions in the MD and in the FT measured by SWAP with the use of the BLSF in comparison to SWAP without the use of the BLSF were observed. No other parameters showed statistically significant differences in the SWAP and SAP tests. Inter-individual standard deviation of the test points in the SWAP exams increased with eccentricity both with and without the use of the BLSF, as sensitivity for inferior and superior hemifields (inferior hemifield minus superior hemifield), but no statistically significant difference in the variability between the two exams was noted. When comparing only the four most inferior points and the four most superior points, the inferior-superior difference increases in both situations - without and with the use of the BLSF. The difference between without and with the use of the BLSF did not show statistically significant difference.

Conclusion: Reductions in MD and FT in the SWAP test with the use of the BLSF were observed. Additional studies are necessary to determine the influence of intraocular lenses with short-wavelength light filter after.