Letter to Editor

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Letter to the Editor: The Transmittance of Ophthalmic Optic Lenses, Spectacle Lenses

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Editorial

The ophthalmic optical lenses are used in the field of eye health to treat the eye diseases, to correct the refraction errors, to improve the eyesight. These are: ''ophthalmic lenses'', ''contact lenses'', ''intraocular lenses'', ''filter'' and ''low vision instruments''. Ophthalmic optical lenses are theoretically examined depending on the basic laws of geometrical optics and visual optics issues [1-2]. And, this letter was written to emphasize the importance of light with various wavelengths used in eye health and other scientific fields. Additionally, increasing visual light transmittance and decreasing aberrations on lenses enable a clearer eye vision.

"The evaluation of spectral transmittance of optical eye-lenses" paper explains the spectral transmittance values of spectacle lenses in ultraviolet radiation (UVR) and visible ranges on spectrum. Various lenses were tested for their transmittance properties depending on the physical, chemical characteristics. The UVR and light transmittance analyses of ophthalmic optics lens are crucial in terms of eye health.

The physical characteristics involve curvature of surfaces, vergence, categories of lens form (plano lens, bi-convex/concave lens, meniscus convex/concave lens), the diameter (R), base curve (BC), diopter (D), sagittal depth (S), surface-type (sphero-cylindrical), edge thickness (ET), optical center (OC), focal point (F), focal power (D) and refractive index (n) of the lenses. The chemical characteristics of ophthalmic lenses are classified as mineral lenses (crown, flint, borosilicate, heavy flint) and organic lenses (CR-39), high index, polycarbonate and trivex) [3-4]. Physical parameters such as diameter (55–70 mm), center thickness (1–5 mm), refractive index (1.50–1.90), diopters (D), base curvature (BC) and focal point (F) of lenses are also important to determine the spectral transmittance results. According to the results, the UVR and visible-light transmittance within the spectrum depends not only on the composition of the eye-glasses but also on the lens thickness, the composition of the lens material, the index numbers and coating characteristics of the lenses [5] . The physical, chemical and optical characteristics should also be evaluated prior to transmittance assessment of lenses. Since long ultraviolet radiation exposure periods cause various eye diseases, light transmittance value in the ultraviolet radiation region shall be close 0%. Within the visible region, the use of ophthalmic lenses with 85% and higher transmittance was found to be suitable in terms of eye health and eye standards. Accordingly, in addition to the transmittance of spectacle lenses in this study, the future research will also focus on contact lenses and intraocular lenses.

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