

Do blue-light filtering lenses improve visual performance, protect vision, and improve sleep in adults?

Clinical Question	How effective and safe are blue-light filtering lenses compared with non-blue-light filtering lenses, for improving visual performance, providing macular protection, and improving sleep quality in adults?
Bottom Line	<p>For the primary outcome measures, all three trials that investigated subjective visual fatigue reported no significant difference in symptoms with blue-light filtering lenses compared to non-blue-light filtering lenses.</p> <p>For the secondary outcome measures, the trial that assessed best-corrected visual acuity reported no significant difference between intervention arms. The two trials that evaluated daytime alertness using subjective symptom scores reported no significant difference between blue-light filtering and non-blue-light filtering lenses. For the subjective sleep outcome only three trials provided quantitative data and reported no significant difference in subjective sleep quality with blue-light filtering lenses compared to non-blue-light filtering lenses.</p>
Caveat	Please note 65% of included trials had a follow-up period of less than two weeks. As such, the longer-term potential benefits and adverse effects of blue-light filtering lenses on the prespecified outcomes investigated in this review are not known. Additionally, 88% of these studies specifically targeted populations with mania, depression and insomnia symptoms, and so there is limited information relating to the effects of blue-light filtering lenses in healthy older adults.
Context	'Blue-light filtering', or 'blue-light blocking', spectacle lenses filter ultraviolet radiation and varying portions of short-wavelength visible light from reaching the eye. Various blue-light filtering lenses are commercially available. Some claims exist that they can improve visual performance with digital device use, provide retinal protection, and promote sleep quality. But the mechanism(s) by which these lenses might impart at least some of these effects remains unclear
Cochrane Systematic Review	Singh S, Keller PR, Busija L, McMillan P, Makrai E, Lawrenson JG, Hull CC, Downie LE. Blue-light filtering spectacle lenses for visual performance, sleep, and macular health in adults. Cochrane Database of Systematic Reviews 2023, Issue 8. Art. No.: CD013244. DOI: 10.1002/14651858.CD013244.pub2. This review contains 17 trials with a total of 619 participants.

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Systematic review link:

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013244.pub2/full>