



The **ROYAL COLLEGE** of
OPHTHALMOLOGISTS

Climate change and eye health

Climate change is not just a global environmental issue: it's a direct threat to eye health and the delivery of essential eyecare services. As highlighted by a 2019 report of the *Lancet Countdown*, "The life of every child born today, will be profoundly affected by climate change, shaping the health landscape at every stage of their lives" [1].

Climate change is set to exacerbate a range of ocular conditions. The accelerated development of cataracts due to increased UV exposure, heightened risks of severe allergic eye diseases, glaucoma, age-related macular degeneration, infections such as trachoma, vitamin A deficiencies, dry eye syndromes, and ocular injuries are all expected to rise in prevalence [2,3]. Not only do these conditions affect quality of life on an individual level, but they also increase the burden on healthcare systems. Moreover, the increasing frequency of extreme weather events can disrupt the physical infrastructure of eye care facilities and interrupt the supply chain of essential medical supplies. Climate-induced mass migration also poses significant challenges to the equitable delivery of eye health services, by exacerbating supply-demand mismatch across eyecare services [4].

Healthcare services, including eyecare, contribute significantly to climate change, representing 4% of total greenhouse gas emissions in the UK [5]. We must recognise that our activities are fuelling climate change and biodiversity loss and take steps to tackle the vicious cycle of ensuing climate-related health challenges. The NHS's commitment to becoming the world's first net-zero national health service is a significant step towards mitigating these consequences and delivering sustainable eyecare. Through net zero targets by 2040 for direct emissions and by 2045 for indirect emissions [6], the NHS sets a precedent for healthcare systems worldwide, demonstrating that large-scale, systemic change is both necessary and achievable.

Eye care, as a high-volume service, probably forms a substantial part of these emissions. For example, in the UK, ophthalmology is the highest volume speciality, accounting for 8.1% of hospital outpatient visits nationally in 2018–19 [7], there is a pressing need for our field to lead by example in reducing our environmental impact. This not only involves rethinking our clinical practices but also advocating for and implementing sustainable policies at every level of care.

The path to sustainable eyecare is both a challenge and an opportunity for innovation. We support the ophthalmic community in embracing sustainability by engaging in education, policy development, and implementing net-zero initiatives. Together, we can ensure that our commitment to high-quality eyecare extends to protecting our planet for future generations.

References

1 Watts, Nick, et al. "The 2019 Report of the Lancet Countdown on Health and Climate Change: Ensuring That the Health of a Child Born Today Is Not Defined by a Changing Climate." *The Lancet*, vol. 394, no. 10211, Nov. 2019, pp. 1836–78, [https://doi.org/10.1016/s0140-6736\(19\)32596-6](https://doi.org/10.1016/s0140-6736(19)32596-6).

2 Alryalat, Saif Aldeen, Toubasi, Ahmad A., Patnaik, Jennifer L. and Kahook, Malik Y.. "The impact of air pollution and climate change on eye health: a global review" *Reviews on Environmental Health*, 2022. <https://doi.org/10.1515/reveh-2022-0209>

- 3 Echevarría-Lucas, Lucía, et al. "Impact of Climate Change on Eye Diseases and Associated Economical Costs." *International Journal of Environmental Research and Public Health*, vol. 18, no. 13, July 2021, p. 7197, <https://doi.org/10.3390/ijerph18137197>.
- 4 McCance, Eleanor, et al. "National Eye Institute's (NEI) Coordination Efforts and Current Opportunities for Sustainability, Adaptation, and Climate Resilience in Global Eye Health – ARVO 2023 Session Commentary." *Eye*, Nov. 2023, pp. 1–2, <https://doi.org/10.1038/s41433-023-02854-9>. Accessed 5 Feb. 2024.
- 5 NHS England. Delivering a "Net Zero" National Health Service. 2022, www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2022/07/B1728-delivering-a-net-zero-nhs-july-2022.pdf.
- 6 NHS. "For a Greener NHS» a Net Zero NHS." www.england.nhs.uk, 2020, www.england.nhs.uk/greenernhs/a-net-zero-nhs/.
- 7 NHS Digital. (n.d.). Hospital Outpatient Activity 2018-19. [online] Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/hospital-outpatient-activity/2018-19>.