

Keep calm and cut the carbon – improving sustainability in ophthalmology

As I dump my tenth pair of gloves into a non-recyclable clinical waste bin; dispose of another handful of plastic minims; or print another wad of single-sided discharge paperwork after a cataract surgery, the inconvenient truth of how these seemingly small actions affect the world around me lingers.

The UK's National Health Service produces 5.4% of the country's carbon emissions, which is higher than the global average for healthcare [1]. The climate crisis is one of the greatest threats to the health of humanity today and there is a growing movement of healthcare professionals engaging in efforts to minimise emissions and waste [2].

Global goals for cutting carbon emissions appear overwhelming. However, we must not underestimate our collective ability to make a difference wherever we are. After we work on our personal carbon footprint, the natural next step is to fix our workplace. In 2013 the Royal College of Ophthalmologists published guidance on sustainability in our practice [3]. It was a visionary piece of work for that time, making suggestions ranging from community optometrist-led primary investigations for chronic eye conditions, to energy saving light bulbs in the department, in order to reduce the speciality's carbon footprint. In reality, how many ophthalmic departments have embraced these changes?

An increasing number of NHS trusts are declaring a climate emergency [4], thus acknowledging that sustainability is now a top priority. This should (along with the latest David Attenborough documentary tugging at our heartstrings) give us the impetus to make small, but effective changes to our practice. These can be divided into personal and departmental calls to action.

Easy personal wins include: switching from single-sided to double-sided printing of paperwork; reducing your work computer monitor brightness to 80%; powering off your computer at the end of clinic and switching off your room lights. Did you know that your average search engine query generates 0.2g of CO₂ emissions? Perhaps switch your search engine to Ecosia.org, a Berlin based search engine which plants a tree for every 45 of your searches and donates 80% of its profits to non-profit organisations. Before copying in the GP, endocrinologist and the Diabetic Screening Service to your paper letter, updating them about Mrs Blogg's last visit to the eye clinic, think if

you can email them instead and reduce your carbon footprint.

Departmental changes that can be made include: switching the staff room tea and coffee to Fairtrade brands; using recycled paper for printing; using energy saving bulbs; usage of reusable tonometer prisms instead of disposable ones; ensuring that recycling bins are provided for staff rooms; and setting workplace computers to automatically shut-down if left inactive for long periods of time.

A culture of sustainability needs to be encouraged at the workplace for larger changes to be made. Dr Juan Mura MD, MHA, at the 37th European Society of Cataract & Refractive Surgeons (ESCRS) in Paris proposed that the carbon footprint produced by cataract surgery could be reduced by readily available resource efficiency measures, such as increasing the use of reusable instruments and supplies, using flash autoclaving, promoting minimum waste, recycling practices, using energy efficient appliances, and investing in low carbon energy sources [5,6]. Following similar strategies, the Aravind Eye Care System in Southern India emitted approximately 96% less carbon than the UK per cataract surgery [5]. With a favourable endophthalmitis rate of 0.05% compared to 0.08% internationally, the greater use of reusable equipment does not seem to adversely affect infection risk [6]. Some NHS trusts in the UK have already returned to using reusable surgical gowns and drapes.

As a result of COVID-19, the restriction on global travel has created a cultural catalyst, driving an online platform for academia. Ophthalmology conferences are no exception, for example, Euretina of October 2020 had over 8000 registrations of attendees virtually [7]. Most of the greenhouse gas emissions from medical conferences are from the travel of attendees [8], however, there is scant literature on the travel-related carbon footprint of medical conferences. A total of 26,506 attendees at the world's largest radiology conference in 2017 were found to have an underestimated CO₂ emission of 39,506,038kg, 80% of which was attributable to the international airplane-travel of attendees [9].

The Royal College of General Practitioners has embraced the 'Green Impact for Health' initiative which has helped nearly 800 practices improve their sustainability and reduce their environmental impact. Their guidance is freely available to view on their website [10] and is an excellent place to

start making a positive change to your local eye department (and to the world!) Finally, if you need any more motivation for green action in your eye department, it has been observed that working in an eco-friendly environment makes for happier employees [11].

References

1. Health Care without Harm. Health care climate footprint report: <https://noharm-uscanada.org/ClimateFootprintReport>
2. Horton R. Offline: Extinction or rebellion? *The Lancet* 2019;**394**(10205): 1216. Available here: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)32260-3/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)32260-3/fulltext)
3. The Royal College of Ophthalmologists Ophthalmic Services Guidance. Sustainability in Ophthalmology: https://www.rcophth.ac.uk/wp-content/uploads/2014/11/2013_PROF_222_Sustainability-in-Ophthalmology-May-2013.pdf
4. UK Climate Emergency Network: <https://www.climateemergency.uk/blog/category/nhs/>
5. Guttman Krader C. Surgery's impact on Environment. *Eurotimes* 2020; <https://www.eurotimes.org/cataract-surgery-impact-environment/>
6. Thiel CL, Schehlein E, Ravilla T, et al. Cataract surgery and environmental sustainability: Waste and lifecycle assessment of phacoemulsification at a private healthcare facility. *J Cataract Refract Surg* 2017;**43**(11):1391-8.
7. Euretina 2020 Virtual: <https://www.euretina.org/#:~:text=EURETINA%202020%20Virtual,-Prof.&text=With%20over%208%2C000%20registrations%20to,success%20of%20the%20virtual%20format>
8. Roberts I, Godlee F. Reducing the carbon footprint of medical conferences. *BMJ* 2007;**334**:324-5.
9. Yakar D, Kwee TC. Carbon footprint of the RSNA annual meeting. *Eur J Radiol* 2020;**125**:108869.
10. Green Impact for Health: <https://greenimpact.org.uk/GIforhealth>
11. Walsh C, Sulkowski AJ. A greener company makes for happier employees more so than does a more valuable one: A regression analysis of employee satisfaction, perceived environmental performance and firm financial value. *Interdisciplinary Environmental Review* 2009;**11**(4):274-82.

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