

A Response to: “A Step Toward Environmental Sustainability in Mohs Surgery”: A United Kingdom Perspective on Environmental Sustainability in Mohs Surgery

We read with interest the article by Leonard and McLean-Mandell in *Dermatologic Surgery*¹ and commend the authors for bringing environmental sustainability in Mohs surgery to the wider attention of readers and dermatologists. We acknowledge their innovative practice alteration of using a hyfrecator over an electrodesiccation device, thereby reducing waste and cost. We offer further reflections on our experience of environmental sustainability in Mohs surgery in the United Kingdom, and a new UK-wide initiative led by the British Society of Dermatology Surgery (BSDS) sustainability subgroup.

Leonard and McLean-Mandell state to the best of their knowledge that there are no studies exploring beliefs and practices surrounding environmental sustainability within the field of Mohs surgery. However, behavioral, procedural and structural interventions for Mohs surgery categorized according to the 5 Rs of sustainability—Reduce, Reuse, Recycle, Rethink and Research, have been discussed briefly.² Additionally, 3 years ago, we were equally concerned about the environmental impact of Mohs surgery and undertook a study that was presented at the British Association of Dermatologists Annual Meeting in 2019.³ The environmental footprint of materials and energy used by our skin surgery operating theatres for Mohs surgery was evaluated. During a 2-week period, we determined the total weight of contaminated waste, noncontaminated waste, sharps waste, and other single use items during 6 days of Mohs surgery. Over 6 days, 26 cases were performed by 3 Mohs surgeons and 1 fellow. The combined waste generation for this period was 25.9 kg of contaminated waste, 12.3 kg noncontaminated waste, and 4.9

kg sharps waste. Moreover, 367 glass slides were required, 26 formalin pots, 26 plastic petri dishes, and 26 paper booklets. These data were extrapolated to estimate the weekly and yearly waste production, factoring in to account days where Mohs surgery was unavailable. This amounted to waste production of 6.22 kg weekly and 323.25 kg yearly. The yearly break down included: 194.25 kg contaminated waste, 92.25 kg noncontaminated waste, and 36.75 kg of sharps waste. This amounts to 25.75 kg of CO₂ production from our center, and an estimated UK output based on 25 centers of 643.75 kg CO₂ using the 2018 UK Government conversion factor calculator. Our results demonstrated a significant waste accumulation and contribution to greenhouse gases from Mohs surgery alone. Subsequently, our practice has shifted to introduce “standard Mohs surgery sets,” which hosts a list of essential items only. This highlights one of the many adaptations Mohs surgeons can implement to reduce their carbon footprint.

In view of the ongoing environmental impact of surgical practice, in the United Kingdom, a BSDS sustainability committee was formed. This subgroup aims to champion/spearhead innovative interventions and create national guidelines to mitigate the environmental impact of dermatology surgery, through working alongside key stakeholders, patients, and colleagues (Figure 1). Notably, although there are published articles discussing environmental sustainability in dermatology surgery,^{4,5} there remains a lack of robust research and evidence-based recommendations. Subsequently, as members of the subgroup, we have devised sustainability domains (Figure 2), which will enable guidance to be mapped accordingly.

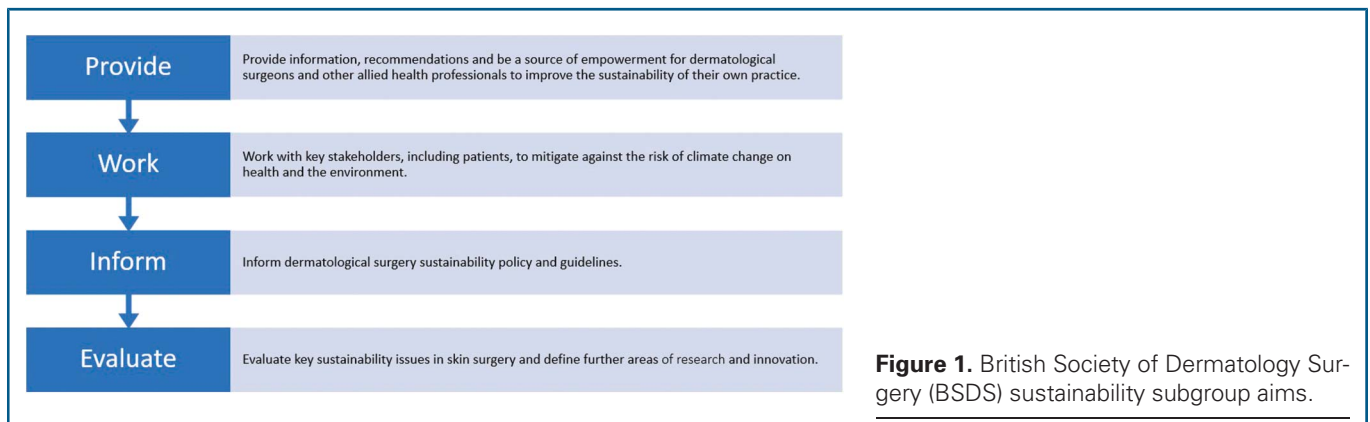


Figure 1. British Society of Dermatology Surgery (BSDS) sustainability subgroup aims.

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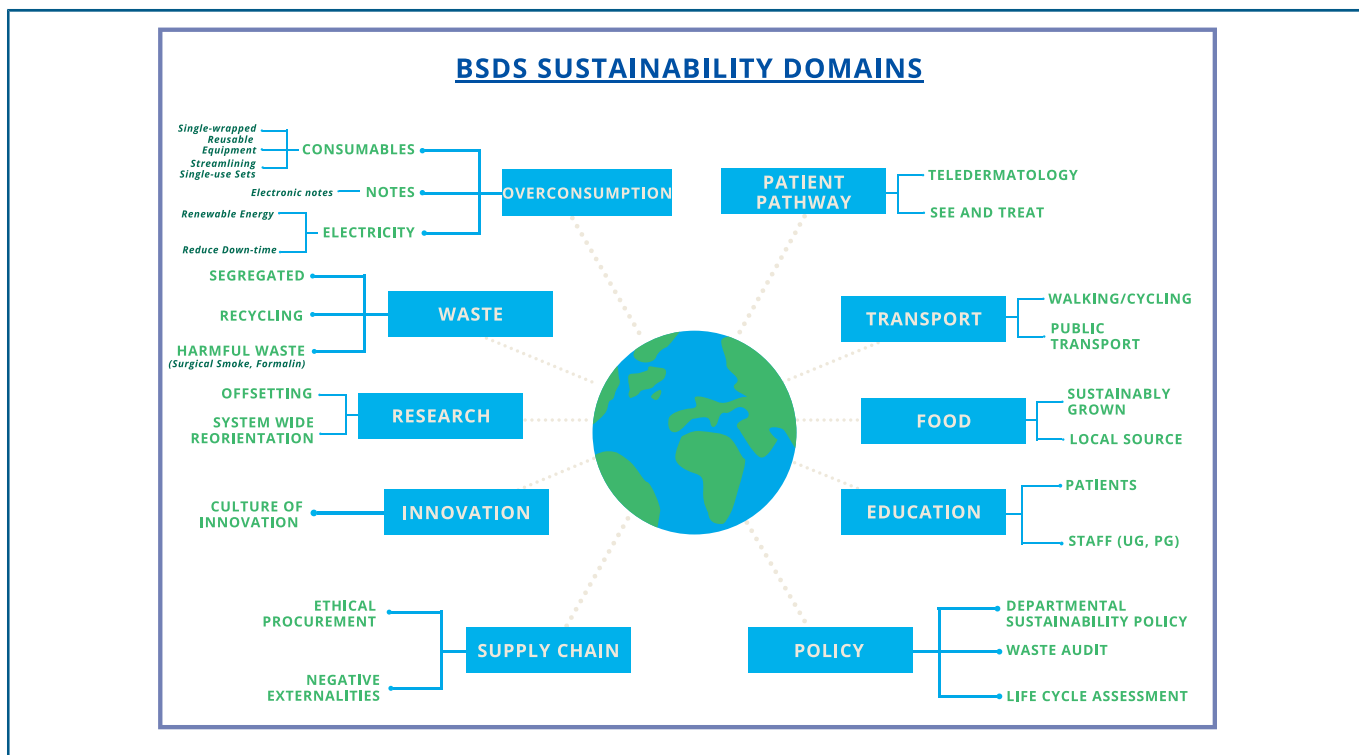


Figure 2. The British Society of Dermatological Surgery (BSDS) sustainability domains for combating climate change.

We believe that through thought-provoking ideas, such as those suggested by Leonard and McLean-Mandell,¹ greater environmental sustainability in Mohs can be achieved. The advent of the 2021 United Nations Climate Change Conference (COP26) and initiatives such as “Net Zero NHS” demonstrates that, as dermatologists/health care professionals, we should act as leaders in this domain. Overall, we should hold ourselves to high professional standards, learn, and collaborate with colleagues as we adopt a flexible, evidence-based approach to environmentally friendly Mohs surgery delivery.

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Ultrasonography as a Novel Technique for Intraoperative Delimitation of Dermatofibrosarcoma Protuberans

Dermatofibrosarcoma protuberans (DFSP) is an uncommon skin neoplasm with low metastatic potential and a high rate of local recurrences due to its infiltrative behavior. Given that this tumor usually presents with poorly defined clinical margins, incomplete resections are common.¹ Therefore, the gold standard treatment is surgical excision with negative margins, performing Mohs

micrographic surgery (MMS),¹ which increases the rate of successful excisions. A case of DFSP successfully treated with slow Mohs surgery using preoperative ultrasonography (US) to determine the surgical margins is reported here. A 31-year-old woman with history of a stage IIIC (T3aN2bM0) nodular melanoma located on the right thigh that had been already excised 4 years ago presented. A