

## LETTER TO THE EDITOR

## Are IPL home devices really foolproof?

### Editor

Hair removal with lasers and intense pulsed light (IPL) devices have become a mainstay in many physicians' offices and non-medical settings (e.g. beauty parlours) all over the world. The great demand for photo-epilation techniques and the ability to cut costs has led to the development of home devices.<sup>1</sup> Acne vulgaris, rosacea and photo rejuvenation are further advertised indications for home use. Many devices are available in the market, although only a few have undergone controlled clinical trials to document their safety and efficacy.<sup>2</sup> The evidence available from prospective uncontrolled clinical trials indicates that the home-use light-based devices currently available are efficacious in short-term hair removal.<sup>3</sup> Of note, most IPL home devices in these studies have been used under medical supervision and/or the studies have been sponsored by the industry itself.

Skin pigmentation has already been identified as an independent risk factor for side-effects in low-fluence IPL<sup>4</sup> whereas other studies endorse IPL home treatment for all skin types.<sup>5</sup> According to the manufacturers, protective eyewear is not required because the light generated is self-contained within the home device; however, this must be regarded as an additional risk factor for ocular damage in handling all cases.<sup>2</sup> Other potential adverse events of IPL home treatment include oedema, pain, erythema, hyper- and hypo-pigmentation, scarring, blistering, crusting, burning, or even paradoxical hair growth. Sufficient safety instructions are often missing or incomplete in the manuals, so users are not made aware of possible complications. Additionally, the lack of individual verbal informed consent generally leads to uncritical application and unrealistic expectations of the user.

We report the case of a 25-year-old Caucasian female with Fitzpatrick Phototype III. She presented with complications following her initial hair removal session using an IPL home device (Rio IPL 8000™; Dezac Group, Cheltenham, UK). As an adverse effect, the site treated on the lower leg showed blistering and crusting which had lasted for 2 weeks (Fig 1). No scarring was seen during the course of the treatment, but hyperpigmentation is still present after a follow-up period of twelve months. The settings used were the lowest standard defaults. There was no extensive sun exposure before and/or after treatment.

In our case, the sources of error probably included the lack of cooling, and too many treatment passes. In addition, a too high energy density has to be discussed; however, according to the



**Figure 1** Blistering and burning after initial hair removal session with an IPL home device on the lower leg.

patient the fluence was set at the lowest possible default. A test treatment had not been conducted either, which is indicated especially in treating larger areas such as on the lower leg. Also, the device user did not have a medical supervision during the (initial) treatment and/or an individual instruction.

To our knowledge, this is the first report with a complication of an IPL home device. Our objective was to show that IPL home devices are not as safe as they purport to be. As in the case with professional systems, there is a thin line between achieving the appropriate therapeutic dose and the manifestation of harmful complications. IPL home devices have received US Food and Drug Administration (FDA) clearance for permanent hair reduction. Nevertheless, it is our conviction that laser and IPL systems should not be used in home devices without the initial support and supervision of a medical professional, and under no circumstances they are to be seen as harmless cosmetic products.

L. Schmitt,<sup>1</sup> K. Rezai,<sup>2</sup> S. Karsai<sup>3,4,\*</sup>

<sup>1</sup>Dermatology clinic, Bremserstr. 79, Ludwigshafen 67063, <sup>2</sup>Dermatology Practice Münster, Windhorststr. 16, Münster 48143, <sup>3</sup>Dermatology clinic, Heidelberger Landstr. 379, Darmstadt 64297, <sup>4</sup>Dermatology clinic, University of Greifswald, Ferdinand-Sauerbruchstr., Greifswald 17475, Germany

\*Correspondence: S. Karsai.

E-mail: syrus.karsai@mail.klinikum-darmstadt.de

## References

- 1 Alster TS, Tanzi EL. Effect of a novel low-energy pulsed-light device for home-use hair removal. *Dermatol Surg* 2009; **35**: 483–489.
- 2 Town G, Ash C. Are home-use intense pulsed light (IPL) devices safe? *Lasers Med Sci* 2010; **25**: 773–780.
- 3 Thaysen-Petersen D, Bjerring P, Dierickx C, Nash JF, Town G, Haedersdal M. A systematic review of light-based home-use devices for hair removal and considerations on human safety. *J Eur Acad Dermatol Venereol* 2012; **26**: 545–553.
- 4 Thaysen-Petersen D, Lin JY, Nash J *et al*. The role of natural and UV-induced skin pigmentation on low-fluence IPL-induced side effects: a randomized controlled trial. *Lasers Surg Med* 2014; **46**: 104–111.
- 5 Garden JM, Zelickson B, Gold MH, Friedman D, Kutscher TD, Afsahi V. Home hair removal in all skin types with a combined radiofrequency and optical energy source device. *Dermatol Surg* 2014; **40**: 142–151.

DOI: 10.1111/jdv.13025

---