

Letter regarding “Effect of laser on pain relief and wound healing of recurrent aphthous stomatitis: a systematic review”

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We studied with great interest the article entitled, “Effect of laser on pain relief and wound healing of recurrent aphthous stomatitis: a systematic review” authored by Suter and colleagues [1]. In this valuable systematic review, the authors evaluated the potential benefits of laser application in management of recurrent aphthous stomatitis. We would like to give explanation regarding the above paper published recently.

In Table 2 of Dr. Valerie G. A. Suter's paper, the total energy used in NTCLT has been stated to be 5–10 J; however, the energy delivered to the surface of the lesions is much lower than the figures above.

For application of CO₂ laser as a non-thermal laser for photobiomodulation, some measures should be considered [2–5]:

- Irradiation of the lesion through a thick layer of transparent gel with high water content
- Application of the CO₂ laser with defocused handpiece, 5–6 mm distant from the surface of the lesion to make the beam wide enough
- Rapid scanning of the lesion with circular motion of the handpiece

With these considerations, CO₂ laser can be applied as a photobiomodulative laser. This technique which was initially termed NACLt, after indicating its non-thermal nature, called Non-Thermal CO₂ Laser Therapy (NTCLT) [5] to avoid misinterpretation with high power fractional non-ablative CO₂ lasers used for skin rejuvenation.

The results of thermometry revealed that final power output of CO₂ laser beam after irradiation through the gel decreased significantly to the range of milliwatts [2]. Hence, the real energy delivered to the surface of the lesion in NTCLT is in the range of millijoules. We hope we will be able to report the results of our recent study about the physical aspects of NTCLT with more accurate information about the real energy applied at the surface of the lesion in NTCLT soon.

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