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ZIMMER COLD AIR SYSTEM IMPROVES LASER TREATMENTS

A clinical study was conducted by Dr.'s Raulin, Greve, and Hammes of the Laserklinik Karlsruhe in Germany to assess the usefulness of the Zimmer Cryo 5 cooling system in aesthetic procedures. This study was presented at the American Academy of Dermatology annual meeting in Washington, D.C. by Doctor Hammes. These researchers treated 166 patients (131 women, 35 men) for several different applications including: hair removal, hemangiomas, telangiectasias, and tattoos. Various laser systems were used: long pulsed alexandrite (LPIR), pulsed dye laser, Q-switched YAG and Q-switched ruby laser. In a prospective study, this group collected data regarding the analgesia of the cooling method and thermal protection of the epidermis.

FOR COOLING, they used the Cryo 5 cold air system manufactured by Zimmer Elektromedizin. This machine uses a compressor system and ambient air to generate a stream of cold air with a flow of 500 to 1,000 L/min. and a temperature as low as -30 C. depending on the desired cooling level (range 1 to 6).

Results of **this study showed that** 11% of the treated patients found that it was as good as the other cooling methods; **86% clearly preferred the cold air therapy.** Leaving out the areas around the nose, the percentage rises to 97%. All female patients whose armpits or bikini zone were epilized said that the cold air therapy had a better analgesic effect. On the average, this effect was better by 87% than when cooling with ice gel.

Because of the good analgesic effect of the cold air cooling, it was possible to increase laser energy levels by an average of 15% - 30%. The rate of side effects was lower, and erythema was less intensive in



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74% of the cases. This was especially obvious in the treatments with the pulsed dye laser. No or very little purpura developed in 70% of the cases. There was only a slight effect on reducing the development of edemas. Only 7% had fewer edemas. Particularly significant was the reduction of crusting. **Despite higher laser energy levels, 83% of the**

patients had weaker or no crusting compared with the previous treatments.

As for the doctors who performed treatment, it was observed that the therapy is more practical, safer, and more pleasant with cold air. The work can be done faster, and there is no need for breaks to apply a cooling medium. The area to be treated is always visible. There are **no delays necessary for the cooling down of handpieces during very long treatment sessions**, and it is not necessary to prepare and dispose of the cooling medium.

THE GENERAL ADVANTAGE of contact-less cooling methods in dermatologic laser therapy is that no medium disturbs the path of the laserbeam. There is, in particular, no interface, which is mostly connected with losses because of dispersion, transmission, and reflection. As there is no substance to be applied to the skin, it is also possible to work faster, which means that the treatment becomes more pleasant for both the doctor and the patient. Another advantage of non-contact cooling methods is that they are not dependent on the topography of the areas to be treated.

Raulin C, Greve B, Hammes S. Cold Air in Laser Therapy: First Experiences with a New Cooling System. Lasers Surg Med 27:404-410

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