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LASER ASSISTED TATTOO REMOVAL IN COMBINATION WITH TOPICALLY APPLIED OPTICAL CLEARING AGENTS

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Objective: To enhance the efficacy and treatment outcome of laser assisted tattoo removal in combination with topically applied optical clearing agents (OCA).

Material and Methods: Six subjects with multi-colored decorative tattoos were recruited in an IRB approved study. Q-switched Alexandrite and Nd:YAG lasers (755, 532 and 1064 nm) were used for treatment. Three sites were evaluated: 1) control; 2) laser treatment alone; 3) laser treatment in combination with OCA. Baseline photographs were obtained using linear and cross-polarized lenses. Treatment parameters varied depending upon the color of the tattoo ink and skin phototype. Immediate whitening was observed in all treated sites. Pictures were obtained immediately, one day, 3 weeks and 6 weeks after a single treatment and analyzed for color content on a computer generated program.

Results: Minimal or no epidermal damage was observed in the areas treated with laser in combination with OCA. Significantly greater tattoo lightening was achieved in the OCA treated area as compared to other test sites.

Conclusion: Epidermal injury threshold and tattoo lightening is increased when light-based treatment are performed in combination with OCA. Epidermal threshold for injury is also increased as a result of reduced dermal back scattering of the incident light.