Of these, hope:

Prospective, before-after cohort study to assess the efficacy of laser therapy on hypertrophic burn scars, using provider-rated and patient-reported scales

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**Introduction:** Hypertrophic burn scars produce significant morbidity, including itching, pain, stiffness, and contracture. Best practices for management continue to evolve, and recent advances in laser technologies may improve our ability to modulate the burn scar. We studied the impact of laser therapies on hypertrophic burn scars, using provider-rated and patient-reported scales.

**Methods:** We conducted an IRB-approved, prospective, before-after cohort study in burn patients with hypertrophic scars. Procedures were performed > 6 months after injury and were repeated monthly, until clinical improvement peaked. Areas treated included burn scars, skin grafts, and donor sites. The pulsed-dye laser was used for pruritis and erythema, whereas the fractional CO₂ laser was used for stiffness and abnormal texture. All procedures were performed in the OR with anesthesia. Main outcome measures were 1) the Vancouver Scar Scale (VSS), which assesses objective changes in pigmentation, erythema, pliability, and height (range 0-15) and 2) the UNC Scar Scale (UNCSS), which documents subjective changes in pain, itching, tingling, and stiffness (range 0-12). Scores before and after treatment were compared by Student’s T test, with statistical significance assigned to p values < 0.05.

**Results:** During 2011, we treated 147 patients (mean age, 26.9 years; mean TBSA, 16.1%) over 415 sessions (2.8 sessions/patient), including PDL (n=327) and CO₂ (n=139), mean surface area 83 cm². Etiology included flame (75), scald (37), contact (12), electrical (9), chemical (6), and other (8). All Fitzpatrick skin types were treated, with 2 being the most common skin type and 3.6 representing the average skin type. Treatments occurred 16 months (median) and 48 months (mean) after burn injury. VSS decreased from 10.4 (SD 2.4) to 5.2 (SD 1.9) (p<0.0001). UNCSS decreased from 5.4 (SD 2.5) to 2.1 (SD 1.7) (p<0.0001). Complications occurred in 19 patients: laryngospasm (1), arrhythmia (1), cellulitis (1), blistering (4), hypopigmentation (6), post-inflammatory hyperpigmentation (2), and perioral herpetic infection (1), representing a complication rate/session of 4.6%. Mean length of follow-up was 4.7 months.

**Conclusions:** Laser therapies significantly improve both the signs and symptoms of hypertrophic burn scars, as measured by objective and subjective instruments. Determining the optimal timing and type of therapy will most likely require randomized controlled trials, but the emergence of these technologies may herald a paradigm shift in how we approach management of the burn scar.
References:
Effect of Laser Therapy on Vancouver Scar Score

* p<0.0001

Effect of Laser Therapy on UNC 4P Scar Score

* p<0.0001