ABDOMINAL LASER LIPOLYSIS USING A MICROPROCESSOR- CONTROLLED ROBOTIC ARM WITH NONCONTACT HEATING AND COOLING BY THOMAS FIALA, MD, MBA, FACS, FRCSC

BACKGROUND:

A novel FDA-cleared device uses a 1064-nm laser to noninvasively induce apoptosis for lipolysis of subcutaneous abdominal fat while maintaining comfortable skin temperatures with a proprietary jet cooling system (eon; Dominion Aesthetic Technologies, Inc., San Antonio, TX). A programmable articulated robotic arm moves the treatment head without any subject contact, maintaining an appropriate 3-dimensional treatment path, compensating for patient movement.

OBJECTIVES:

The goal of this prospective, single center, open-label study was to demonstrate the safety and effectiveness of this device for reducing subcutaneous abdominal fat when operated with an updated power delivery curve.

METHODS:

Male and female subjects with Fitzpatrick skin types I to VI (N = 26) were treated. Four abdominal zones up to 150 cm2 each customized in size and location for body habitus, were treated. Four underwent a single 20-minute treatment session. Follow-up visits occurred after 6 and 12 weeks. A standardized protocol was used to obtain ultrasound measurement of subcutaneous abdominal fat thickness, abdominal circumference, reported patient satisfaction and digital images.

RESULTS:

The mean treatment area was 378.5 cm2. At Week 12, there was a 21.6% or 6.3 mm mean reduction in abdominal subcutaneous fat thickness and a 4.1-cm (1.6-inch) mean reduction in abdominal circumference. Most subjects (84.6%) were satisfied or very satisfied with their results. The mean pain score was 2.5 on an 11-point ordinal scale. There were no nonresponders. Only 2 adverse events were noted: mild transient erythema (n = 1, 3.8%) and localized subcutaneous firmness (n = 1, 3.8%) which resolved without intervention within 12 weeks.

CONCLUSION:

This contact-free device is safe and effective for reducing subcutaneous abdominal fat and represents an improvement on the prior treatment protocol.

CLINICAL RESULTS	DETAILS
Average upper abdomen fat reduction was 21.6% measured by ultrasound	20 females and 6 males - ages 21 to 61
Average lower abdomen fat reduction was 25.3% measured by ultrasound	All Fitzpatrick Scale Skin Types
Circumferential average loss was 6.3mm / 2.3 in (equivalent to 2+ belt sizes)	BMIs 17.8 to 32.2
Over 73% of patients showed greater than 20% fat reduction measured by ultrasound	Mean treatment area 378.5 cm2 (full abdomen)
Over 96% of patients would recommend this procedure	Zero Non-Responders