

1. Semin Cutan Med Surg. 2009 Dec;28(4):257-62.

High-intensity focused ultrasound effectively reduces adipose tissue.

[Fatemi A.](#)

S-thetic Clinic Düsseldorf, Düsseldorf, Germany. fatemi@s-thetic.de <fatemi@s-thetic.de>

Abstract

Liposonix is considered to be a nonsurgical treatment for body contouring that uses high-intensity focused ultrasound (HIFU) to disrupt adipocytes percutaneously. We wanted to find out about its efficacy, effectiveness, and so forth. The technique delivers energy across the skin surface at a relatively low intensity, but brings this energy to a sharp focus in the subcutaneous fat. At the skin surface, the intensity of the ultrasound energy is low enough so that no damage occurs. The focusing of the ultrasound beam at specific depths beneath the epidermis, combined with proprietary application techniques, results in adipose tissue disruption. Once adipocytes have been disrupted, chemotactic signals activate the body's inflammatory response mechanisms. Macrophage cells are attracted to the area to engulf and transport the lipids and cell debris. This results in an overall reduction in local adipose tissue volume. Our clinical and histologic studies will show exactly what happens under the skin. We did a series of studies on gross pathology and histology, and we tried to correlate these with the clinical results. The histologies show clearly that adipocytes are disrupted by HIFU. The pathologies show the lesions, but they are always at a safe distance from dermis or the epidermis. The correlation between focal depth, energy levels, and clinical results is evident. The average circumference reduction after treatment of the abdomen and waist is 4-5 cm. Liposonix turns out to be a safe and effective technique for nonsurgical body sculpting by reduction of fat deposits.

PMID: 20123425 [PubMed - indexed for MEDLINE]

Item 1 of 1

1. Aesthet Surg J. 2010 Mar;30(2):217-24.

Safety and efficacy of [UltraSound] treatments to improve the appearance of body contours: multiple treatments in shorter intervals.

[Ascher B.](#)

Paris Academy, Clinique Iena, Paris, France. benjaminascher@wanadoo.fr

Abstract

BACKGROUND: The [UltraSound] System is a noninvasive fat reduction and body contouring system currently approved for use outside the United States that utilizes focused ultrasound to selectively disrupt adipocytes. **OBJECTIVE:** To evaluate the clinical safety and efficacy of the [UltraSound] system when the

intervals between treatments are shortened.

METHODS: Twenty-five healthy Caucasian women were selected from the patient population at two clinics in Paris, France, and received three 30- to 90-minute Contour I treatments in the abdominal region at two-week intervals. Safety parameters evaluated included adverse events, local skin reaction, and pain. Efficacy parameters evaluated included treatment area circumference, body weight, and comparison of before and after photos. Untreated thigh areas served as an internal control. Subjects were followed for 84 days after the last treatment (day 112).

RESULTS: No adverse events occurred. The majority of subjects (n = 23; approximately 90%) reported no pain. Mean midline circumference (2 cm below midline) was reduced by 2.47 cm (P < .001) on day 14 after the first [UltraSound] treatment, 3.51 cm (P < .001) on day 56, and 3.58 cm (P < .001) on day 112. Peak midline circumference reduction was 3.12 cm on day 112. Most patients (n = 14; 63%) reported a positive change in body contour. Mean thigh circumference (the control area) was unchanged; the relative change between treated and untreated areas of the abdomen was significantly different at all time points. Circumference and weight reduction were significantly correlated (r = 0.42-0.71) at all time points; mean weight decrease was not statistically significant. Circumference reduction on day 112 positively correlated with patients' subjective satisfaction scores.

CONCLUSIONS: Our data showed that successive [UltraSound] treatments at two-week intervals were safe and tolerable and also significantly reduced treatment area circumference.

PMID: 20442099 [PubMed - in process]

Lasers Surg Med. 2007 Apr;39(4):315-23.

Body contouring by non-invasive transdermal focused ultrasound.

[Moreno-Moraga J](#), [Valero-Altés T](#), [Riquelme AM](#), [Isarria-Marcosy MI](#), [de la Torre JR](#).

Instituto Médico Laser, Madrid, Spain. consulta@iml.es

Abstract

BACKGROUND AND OBJECTIVES: The risks of currently available invasive procedures in body contouring motivate a need for safer, non-invasive technologies for improving the appearance of body silhouette. A new device has been developed that uses focused therapeutic ultrasound to reduce adipose tissue non-invasively. The aim of this study was to assess the efficacy and safety of a novel non-invasive focused ultrasound system in reducing localized fat deposits to improve body contours.

STUDY DESIGN/PATIENTS AND METHODS: A prospective study was conducted on 30 healthy patients. All patients underwent three treatments, at 1-month intervals, and were followed for 1 month after the last treatment. Areas treated were the abdomen, inner and outer thighs, flanks, inner knees, and breasts (males only). No other body contouring procedure was used during the study. Efficacy was determined by change in fat thickness, assessed by ultrasound measurements, and by circumference measurements. Weight change was monitored to assess whether reduction in fat thickness or circumference was dependent on or independent of weight loss. Safety was determined by clinical findings, assays of serum triglycerides, and liver ultrasound evaluation for the presence of steatosis.

RESULTS: All patients showed significant reduction in subcutaneous fat thickness within the treated area. The mean reduction in fat thickness after three treatments was 2.28+/-0.80 cm. Circumference was reduced

by a mean of 3.95+/-1.99 cm. Weight was unchanged during the treatment and follow-up period. No adverse effects were observed.

CONCLUSIONS: This study shows the efficacy and safety of focused ultrasound, using the [UltraSound], as a non-invasive transdermal method for reducing unwanted fat deposits in the body. Multiple treatments combined with appropriate patient and treatment area selection can produce dramatic improvements in body contour. (c) 2007 Wiley-Liss, Inc.

PMID: 17457840 [PubMed - indexed for MEDLINE]

PubMed Results

Item 1 of 1

1. Aesthetic Plast Surg. 2010 Apr 10. [Epub ahead of print]

High-Intensity Focused Ultrasound Effectively Reduces Waist Circumference by Ablating Adipose Tissue from the Abdomen and Flanks: A Retrospective Case Series.

[Fatemi A](#), [Kane MA](#).

S-thetic Clinic Düsseldorf, Düsseldorf, Germany, fatemi@s-thetic.de.

Abstract

BACKGROUND: Currently available technologies for performing aesthetic body sculpting are either noninvasive but require multiple treatments to achieve relatively superficial effects or very effective but also invasive and sometimes associated with serious complications. A new, noninvasive alternative is to ablate adipose tissue using high-intensity focused ultrasound (HIFU). When focused within subcutaneous adipose tissue, HIFU quickly raises the local temperature, resulting in instantaneous cell death via coagulative necrosis within the targeted area but no damage to the surrounding tissue.

METHODS: A new HIFU device, the LipoSonix system (Medicis Technologies Corporation, Bothell, WA, USA), was used by our clinic staff to reduce waist circumference via removal of excess adipose tissue from the anterior abdomen and flank areas. This report describes the results of a retrospective chart review of patients at one clinic who underwent HIFU treatment of the anterior abdomen and flank areas.

RESULTS: A total of 85 men and women with a mean age of 43.8 years underwent a single HIFU treatment session. The time required to complete treatment was approximately 1 to 1.5 h. Using a mean energy level of 134.8 J/cm² and a focal depth of 1.1 to 1.6 cm, the waist circumference was decreased by an average of 4.6 cm after 3 months. Of the 85 patients, 10 (11.8%) reported adverse events including prolonged tenderness (n = 3), ecchymosis (n = 3), hard lumps (n = 2), edema (n = 1), and pain (n = 1), which resolved spontaneously.

CONCLUSIONS: The authors conclude from their experience that HIFU represents a safe and effective means for performing noninvasive body sculpting.

PMID: 20383499 [PubMed - as supplied by publisher]

PubMed Results

[Amadeus Health & Beauty](#) ABN 18100631730 is an Authorised Representative of My Salon Solutions P/L

Ph: 0419 955 595 email: daniel@amadeushealth.com.au

PO Box 171 Turramurra NSW 2074, PO Box 686 Glenelg SA 5045, 1/59 Ross St, Toorak, Vic 3142

Page | 3

1. Semin Cutan Med Surg. 2009 Dec;28(4):263-7.

Non-invasive, external ultrasonic lipolysis.

[Coleman KM](#), [Coleman WP 3rd](#), [Benchetrit A](#).

Dermatology, Private Practice, Austin, TX, USA.

Abstract

Numerous nonsurgical techniques and devices have sought to reproduce the effectiveness of liposuction. Unfortunately, the vast majority of these has fallen short of adequate results or has been plagued with complications. [UltraSound] is a device that is able to accomplish the reduction of the subcutaneous fat with a procedure that is both comfortable and leads to good patient satisfaction. Its design of a nonthermal ultrasonic energy is able to produce cavitation leading to fat cell lysis while sparing adjacent blood vessels and nerves. Although the results are not equivalent to surgical results, this device will offer a safe and effective alternative for patients who are apprehensive about undergoing liposuction.

PMID: 20123426 [PubMed - indexed for MEDLINE]