

Noninvasive selective cryolipolysis and reperfusion recovery for localized natural fat reduction and contouring.

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Abstract

BACKGROUND: Cryolipolysis is a contemporary method of reducing fat by controlled extraction of heat from adipocytes.

OBJECTIVES: The authors recorded temperature profiles during a single cryolipolysis treatment/recovery cycle (with and without massage) and report on the clinical safety and efficacy of this procedure.

METHODS: In the pilot study group (PSG), the abdomens of 6 patients were treated with cryolipolysis and subdermal temperatures were recorded. In the clinical treatment group (CTG), 112 patients were treated without temperature recordings and results were evaluated through matched comparison of standardized photographs, caliper measurements, ultrasound imaging, and global assessments.

RESULTS: Thirty minutes into the cooling phase, subdermal temperatures of patients in the PSG declined precipitously from pretreatment levels and remained low until the end of treatment. During recovery, subdermal temperatures of the only subject who received massage returned faster and to higher levels than the temperatures of subjects who did not receive massage. Patients in the CTG who were available for follow-up measurements at 6 months (n = 85) demonstrated an average fat reduction of 21.5% by caliper measurements; 6 random patients from this group also showed an average of 19.6% fat reduction by ultrasound imaging at 6 months. Global assessments were highest for the abdomen, hip, and brassiere rolls. Minimal side effects were observed, and patients experienced no significant downtime.

CONCLUSIONS: Noninvasive cryolipolysis results in a predictable and noticeable fat reduction within 6 months and does not cause skin damage. Profiling of subdermal temperatures may provide additional insights for improving clinical effectiveness and safety.

LEVEL OF EVIDENCE: 3.

KEYWORDS: body contouring; cryolipolysis; fat removal; liposuction; reperfusion-injury; temperature profile