

## **Suction-assisted lipectomy fails to improve cardiovascular metabolic markers of disease: a meta-analysis**

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### **Abstract**

**Background:** The purpose of this study was to determine whether suction-assisted lipectomy (SAL) decreases the incidence of early cardiovascular disease risk factors or its biochemical and clinical risk indicators. **Methods:** A systematic review of the literature was performed by conducting a predefined, sensitive search in MEDLINE without limiting the year of publication or language. The extracted data included the basal characteristics of the patients, the surgical technique, the amount of fat extracted, the cardiovascular risk factors and the biochemical and clinical markers monitored over time. The data were analysed using pooled curves, risk ratios and standardised means with meta-analytical techniques. **Results:** Fifteen studies were identified involving 357 patients. In all of the studies, measurements of predefined variables were recorded before and after the SAL procedure. The median follow-up was 3 months (interquartile range (IQR) 1–6, range 0.5–10.5). The mean amount of extracted fat ranged from 2063 to 16,300 ml, with a mean  $\pm$  standard deviation (SD) of  $6138 \pm 4735$  ml. After adjusting for time and body mass index (BMI), leptin and fasting insulin were the only markers that were significantly associated with the amount of aspirated fat. No associations were observed for high sensitive C-reactive protein (hCRP), interleukin-6 (IL-6), adiponectin, resistin, tumour necrosis factor- $\alpha$  (TNF- $\alpha$ ), Homeostasis Model of Assessment (HOMA), total cholesterol, high-density lipoprotein (HDL), low-density lipoprotein (LDL), triglycerides, free fatty acids or systolic blood pressure. **Conclusions:** Based on the results of our analysis, we conclude that there is no evidence to support the hypothesis that subcutaneous fat removal reduces early cardiovascular or metabolic disease, its markers or its risk factors..

### **Keywords**

Suction-assisted lipectomy, Metabolic disease, Risk factors, Meta-analysis, Systematic review, Liposuction, Liposculpture, Lipoplasty, Cardiovascular.