



2018 CONFERENCE  
NEXT STEPS IN THE TREATMENT OF LIPEDEMA & DERCUM'S DISEASE

# Liposuction Technique Matters for Lipedema: Fact or Fake News?

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**Chicago, Illinois**



# DISCLOSURES

- Nothing to disclose related to lipedema or liposuction



# Objectives

- Introduce Levels of Evidence
- Explain types of liposuctions
- Scientific & clinical assessment of techniques
- Understand limitations of liposuction volumes





# My Background

- Chair Quality & Performance Metrics Committee (ASPS)
- Chair Tracking Operations & Outcomes in Plastic Surgery (ASPS)
- Patient Safety Committee (ASPS)
- Over 3000 liposuction cases
- Over 250 lipedema patients
- Plastic & Reconstructive Surgery Editorial Board



EDITORIAL BOARD

Plastic and Reconstructive Surgery





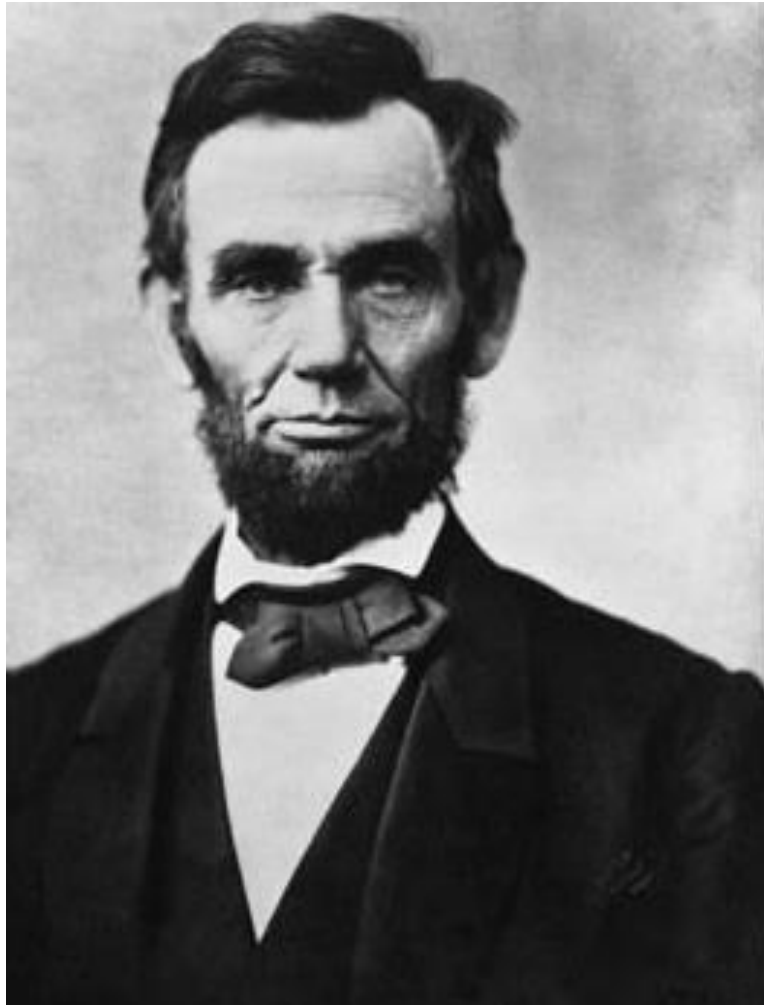
# Show me the Evidence

- Level 1 = High quality RCT or systematic review (SR)
- Level 2 = Lesser quality RCT, comparative study, or SR
- Level 3 = Retrospective comparative study or SR
- Level 4 = Case series
- Level 5 = Expert opinion





# Internet Does NOT have Levels of Evidence



“Don’t believe everything you read on the Internet just because there’s a picture with a quote next to it.”

—Abraham Lincoln





# Deceptive Lipedema Treatment



Before & after High Def Vaser liposuction treatment, 3 sessions



# Deceptive Lipedema Treatment

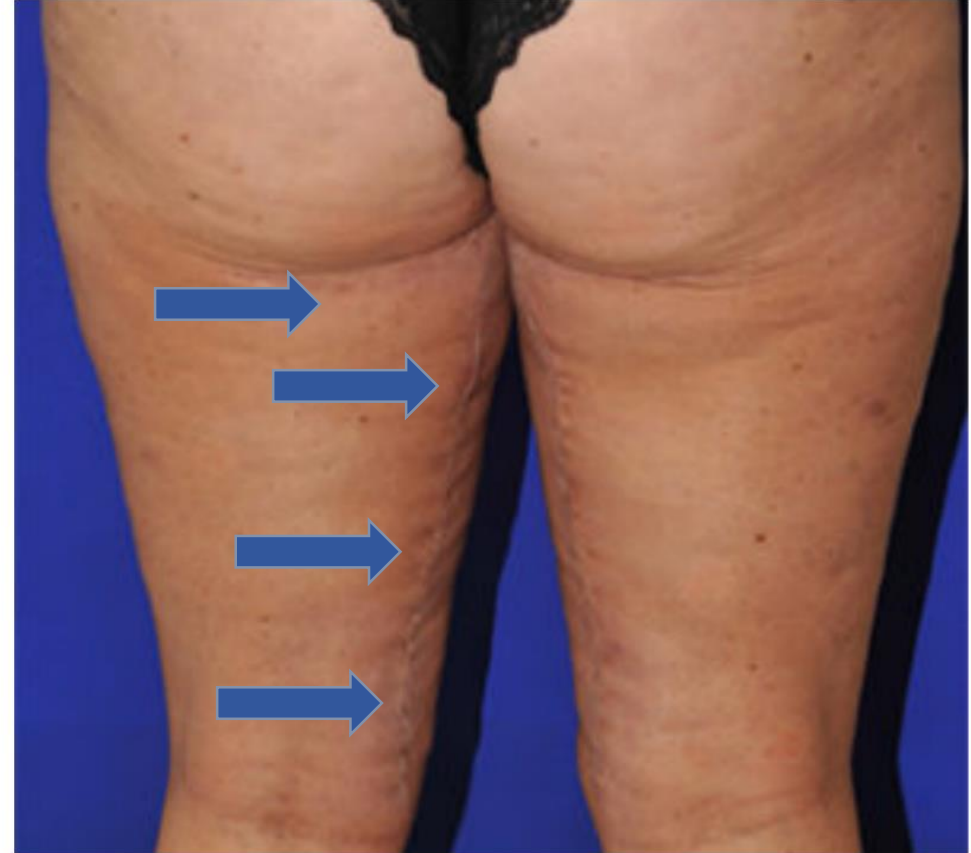


Before & after High Def Vaser liposuction treatment, 3 sessions





# Deceptive Lipedema Treatment



**Fake News!** This patient had a **thigh lift!**



# It's a Process.....



Before



After 2 rounds of  
liposuction  
SAL & PAL



After liposuction &  
thigh lift





# Published Papers in PubMed

- Lipedema 183 results
- Lipedema Treatment 114 results
- Lipedema Surgery 65 results
- Lipedema Liposuction 38 results
  - Primary studies on liposuction 9 publications
  - Reviews of literature 4 publications
- Comparative studies 0
- Randomized controlled studies 0
- Lymphatic Sparing Liposuction 3 results **0 related to Lipedema**



# Liposuction Options

- Tumescent – All liposuction procedures **must** use some tumescent fluid to prevent bleeding
- Traditional (SAL)
- Power Assisted (PAL)
- Ultrasound Assisted (UAL)
- VASER Assisted (VAL)
- Laser Assisted (LAL)
- Water Assisted BodyJet (WAL)

**All can be done:  
Awake  
Minimal incisions  
Minimal bruising**



# Liposuction Options

- Tumescent – All liposuction procedures **must** use some tumescent fluid to prevent bleeding
- Traditional (SAL)
- Power Assisted (PAL)
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- Laser Assisted (LAL)
- Water Assisted BodyJet (WAL)

I do all of them

Minimal incisions  
Minimal bruising





# Traditional Liposuction

Dependable & reliable

Low cost

No energy damage

Low risk





# Power Assisted Liposuction

Dependable & reliable

Low cost

No energy damage

Shorter procedure

Best for “tough” tissue





# Ultrasound & Vaser Assisted Liposuction

Dependable & reliable

High cost

Possible energy damage

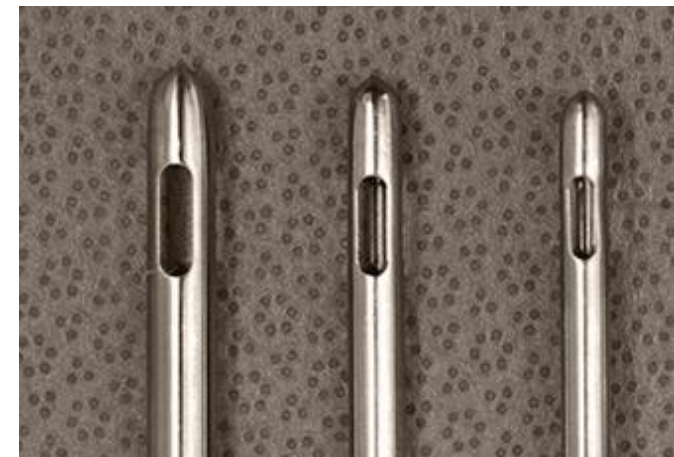
Longer procedure

Requires 2 parts

Vaser treatment to break up fat

Traditional liposuction to remove fat

**No evidence of skin tightening**





# Water Assisted Liposuction (BodyJet)

Dependable & reliable

Moderate cost

No energy damage

Longer procedure

Additional water adds to fat removal limit

**No evidence of “more gentle” treatment**





# Laser Assisted Liposuction (SmartLipo)

Dependable & reliable

Vert high cost

Possible energy damage

Prolonged swelling

Longer procedure

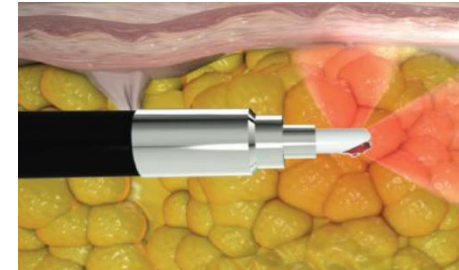
Requires 3 parts

Laser treatment to break up fat

Traditional liposuction to remove fat

Laser treatment to tighten skin

**No evidence of skin tightening in lipedema**







# How Much Fat Can be Removed?

## PATIENT SAFETY

### Outcomes Article

2009

## Evidence-Based Patient Safety Advisory: Liposuction

Phillip C. Haeck, M.D.  
Jennifer A. Swanson, B.S.,  
M.Ed.  
Karol A. Gutowski, M.D.  
C. Bob Basu, M.D., M.P.H.  
Amy G. Wandel, M.D.  
Lynn A. Damitz, M.D.  
Neal R. Reisman, M.D., J.D.

**Summary:** Liposuction is considered to be one of the most frequently performed plastic surgery procedures in the United States, yet despite the popularity of liposuction, there is relatively little scientific evidence available on patient safety issues. This practice advisory provides an overview of various techniques, practices, and management strategies that pertain to individuals undergoing liposuction, and recommendations are offered for each issue to ensure and enhance patient safety. (*Plast. Reconstr. Surg.* 124 (Suppl.): 28S, 2009.)

- 5000 cc limit (about 5 quarts)
  - Includes removed fat **and** fluid
- Otherwise should be
  - **Staged** – 2 or more outpatient procedures
  - **Monitored overnight** – 1 procedure but higher cost
- No evidence to support this limit
  - Accepted by most surgery facilities & law in some states



# Is There a Liposuction Limit?

 COSMETIC

2015

## Is There a Safe Lipoaspirate Volume? A Risk Assessment Model of Liposuction Volume as a Function of Body Mass Index

Ian Chow, B.A.  
Mohammed S. Alghoul,  
M.D.  
Nima Khavanin, B.S.  
Philip J. Hanwright, M.D.  
Kristen E. Mayer, B.S.  
Keith M. Hume, M.A.  
Robert X. Murphy, Jr., M.D.,  
M.S.  
Karol A. Gutowski, M.D.  
John Y. S. Kim, M.D.

**Background:** No concrete data exist to support a specific volume at which liposuction becomes unsafe; surgeons rely on their own estimates, professional organization advisories, or institutional or government-imposed restrictions. This study represents the first attempt to quantify the comprehensive risk associated with varying liposuction volumes and its interaction with body mass index.

**Methods:** Suction-assisted lipectomies were identified from the Tracking Operations and Outcomes for Plastic Surgeons database. Multivariate regression models incorporating the interaction between liposuction volume and body mass index were used to assess the influence of liposuction volume on complications and to develop a tool that returns a single adjusted odds ratio for any combination of body mass index and liposuction volume. Recursive parti-

- Liposuction limit should be based on BMI
- More than 100 cc per BMI increases complications
- Most common complication: Seroma (fluid collection)
- Not yet accepted by most surgical facilities or laws



# Lymphatic System

- Superficial Lymphatic System
  - Medial vessels follow the great saphenous vein
  - Lateral vessels follow the small saphenous vein
- Deep Lymphatic System
  - Follows the deep arteries
- Lymphatic vessels follow the blood vessels
  - If blood vessels are not injured, neither are the lymphatics
- Lymphatic problems do **not** happen after normal liposuction



# “Lymphatic Sparing Liposuction”

## Liposuction Technique and Lymphatic Lesions in Lower Legs: Anatomic Study to Reduce Risks

Frick, Andreas M.D.; Hoffmann, Johannes N. M.D.; Baumeister, Rüdiger G. H. M.D.; Putz, Reinhard M.D.

Plastic and Reconstructive Surgery: June 1999 - Volume 103 - Issue 7 - p 1868–1873

- Small **cadaver study** suggesting less damage to lymphatic system when liposuction is done longitudinally vs transversely
- Nearly all liposuction is done longitudinally (in the same direction as the lymphatic vessels) in the extremities
- Long-term lymphatic damage is not an issue after liposuction
- “Lymphatic Sparing Technique” is actually normal liposuction



# Lipedema & liposuction clinical studies







# Small Study: Power Assisted Lipo



JDDG

Journal of the German  
Society of Dermatology

DOI: 10.1111/j.1610-0387.2010.07504.x

Original Article

## Liposuction is an effective treatment for lipedema – results of a study with 25 patients

Stefan Rapprich, Anne Dingler, Maurizio Podda  
Department of Dermatology, Darmstadt Hospital, Germany

2010

- Vibration liposuction (PAL)
- Good results with significant pain and leg volume reduction



# Good Study: Power Assisted Lipo

THERAPEUTICS

2011

BJD  
British Journal of Dermatology

## Tumescent liposuction in lipoedema yields good long-term results

W. Schmeller, M. Hueppe\* and I. Meier-Vollrath

Hanse-Klinik, St-Juergen-Ring 66, D-23564 Lübeck, Germany

\*Department of Anaesthesiology, University of Lübeck, Ratzeburger Allee 160, D-23538 Lübeck, Germany

- 164 patients treated with PAL
- 112 evaluated at more than 1 year with standardized questionnaire
- Overall significant improvement in volume, QOL, etc



# Best Study: Power Assisted Lipo

SURGICAL DERMATOLOGY

2015

BJD  
British Journal of Dermatology

## Long-term benefit of liposuction in patients with lipoedema: a follow-up study after an average of 4 and 8 years

A. Baumgartner,<sup>1</sup> M. Hueppe<sup>2</sup> and W. Schmeller<sup>1</sup>

- Follow up of previous study
- Compared to 4 years, improvement in pain, sensitivity to pressure, edema, bruising, restricted movement, patient self-assessment cosmetic appearance, quality of life & overall impairment persisted
- At 8 years, reduction in amount of conservative treatment similar to 4 years
- Demonstrates long-lasting positive effects of **power assisted liposuction**



# Does Water Liposuction Matter?

Aesth Plast Surg  
DOI 10.1007/s00266-008-9214-y

2008

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ORIGINAL ARTICLE

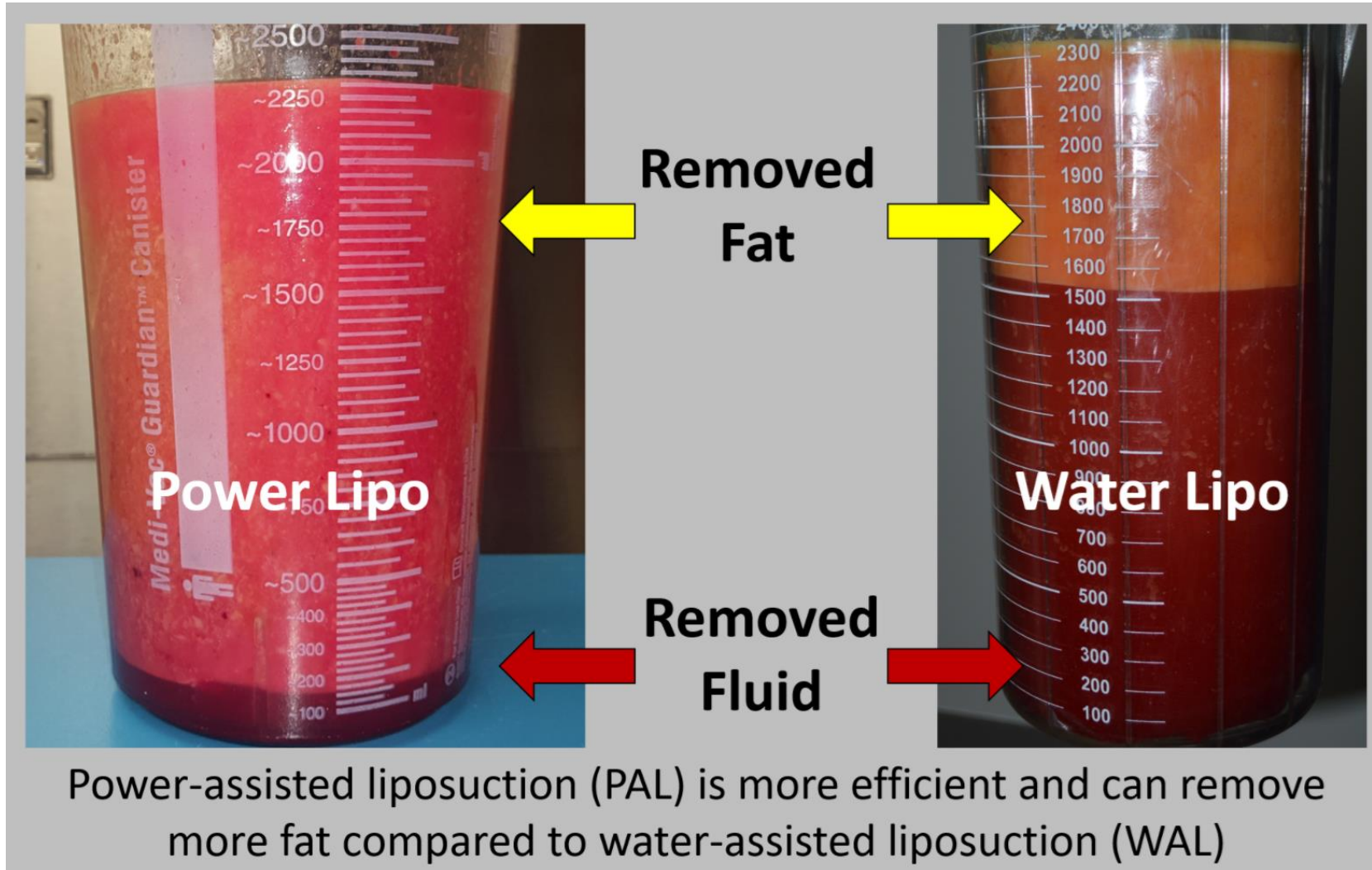
## **Water Jet-Assisted Liposuction for Patients with Lipoedema: Histologic and Immunohistologic Analysis of the Aspirates of 30 Lipoedema Patients**

J. J. Stutz · D. Krahl

- False & unsupported claims about tumescent fluid & liposuction
- Analyzed the **removed fat tissue**, not what was left behind
- Did **not** compare to any other liposuction technique
- Very low fat removal volumes
- No clinical results measured



# What is Removed Matters







# Liposuction & Skin Tightening

- Many claims to tighten the skin
- Mostly unproven
- Ultrasound (UAL) - many claims in the 1990's but no evidence
  - Vaser (VAL) – Split study vs SAL, no patient reported difference at 6 months
  - Laser (LAL) – Split study vs SAL, LAL 17% tighter at 3 months

A Multicenter, Prospective, Randomized, Single-Blind, Controlled Clinical Trial Comparing VASER-Assisted Lipoplasty and Suction-Assisted Lipoplasty

Michael W. Nagy, M.D.  
Paul F. Vanek, Jr., M.D.

*Toms River, N.J.; and Mentor, Ohio*

**Background:** No scientific comparative study has demonstrated any statistically significant clinical improvement attributable to a new lipoplasty technology relative to traditional suction-assisted lipoplasty. This prospective study used a contralateral study

## Cosmetic Medicine

Randomized, Blinded Split Abdomen Study Evaluating Skin Shrinkage and Skin Tightening in Laser-Assisted Liposuction Versus Liposuction Control

Barry E. DiBernardo, MD

Aesthetic Surgery Journal  
30(4) 593–602  
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[http://www.sagepub.com/  
journalsPermissions.nav](http://www.sagepub.com/journalsPermissions.nav)  
DOI: 10.1177/1090820X10380707  
[www.aestheticsurgeryjournal.com](http://www.aestheticsurgeryjournal.com)



# Traditional Liposuction Results





# Traditional Liposuction Results





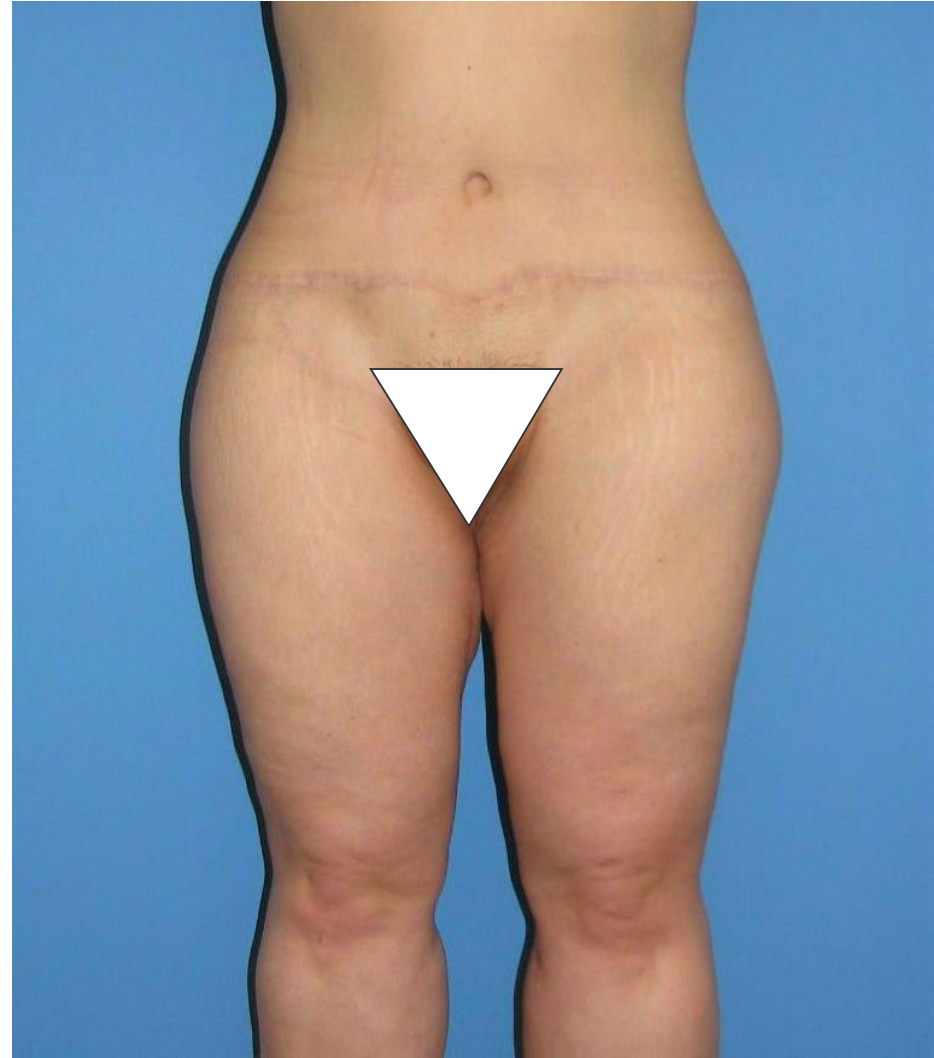
# SAL 2 Stages







# Then Body Lift + Thigh Lift





# Conclusions

- Don't fall for marketing and hype
- Consider the source
  - Many low level publications and meaningless studies
- It's the surgeon, not the type of liposuction
- Be prepared for more than one liposuction procedure
  - 2 to 3 staged procedures are common
- May need skin removal (thigh lift)



# CONTACT INFORMATION

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