

# Vanquish

## External Radiofrequency for Fat Reduction

***Karol A Gutowski, MD, FACS***

*Premier Global Hot Topics*

The Aesthetic Meeting 2014

BUILDING THE BRIDGE BETWEEN SCIENCE AND ART

**San Francisco** April 24-29 Moscone Center



# Disclosures

RTI Surgical - Advisor

Suneva Medical - Instructor

Angiotech/Surgical Specialties - Advisory Board

Viora (RF Device Company) - Nonpaid Speaker & Investigator

# Status of Product

**Vanquish** (BTL Aesthetics, Prague, Czech Republic)

- External radiofrequency device

## **FDA Status**

- Cleared for deep tissue heating
- NOT cleared for treatment of adipose tissue
- Will be discussing non-FDA approved uses

# Presentation Level of Evidence = IV

## Levels of Evidence and Qualifying Studies (Therapeutic Studies):

- I High-quality, multi-centered or single-centered, randomized controlled trial with adequate power ( $N \geq 100$ ); or a systematic review of these studies
- II Lesser-quality, randomized controlled trial; prospective cohort study; or systematic review of these studies
- III Retrospective comparative study; case-control study; or a systematic review of these studies
- IV Case series**
- V Expert opinion; case report or clinical example; or evidence based on physiology, bench research or "first principles"

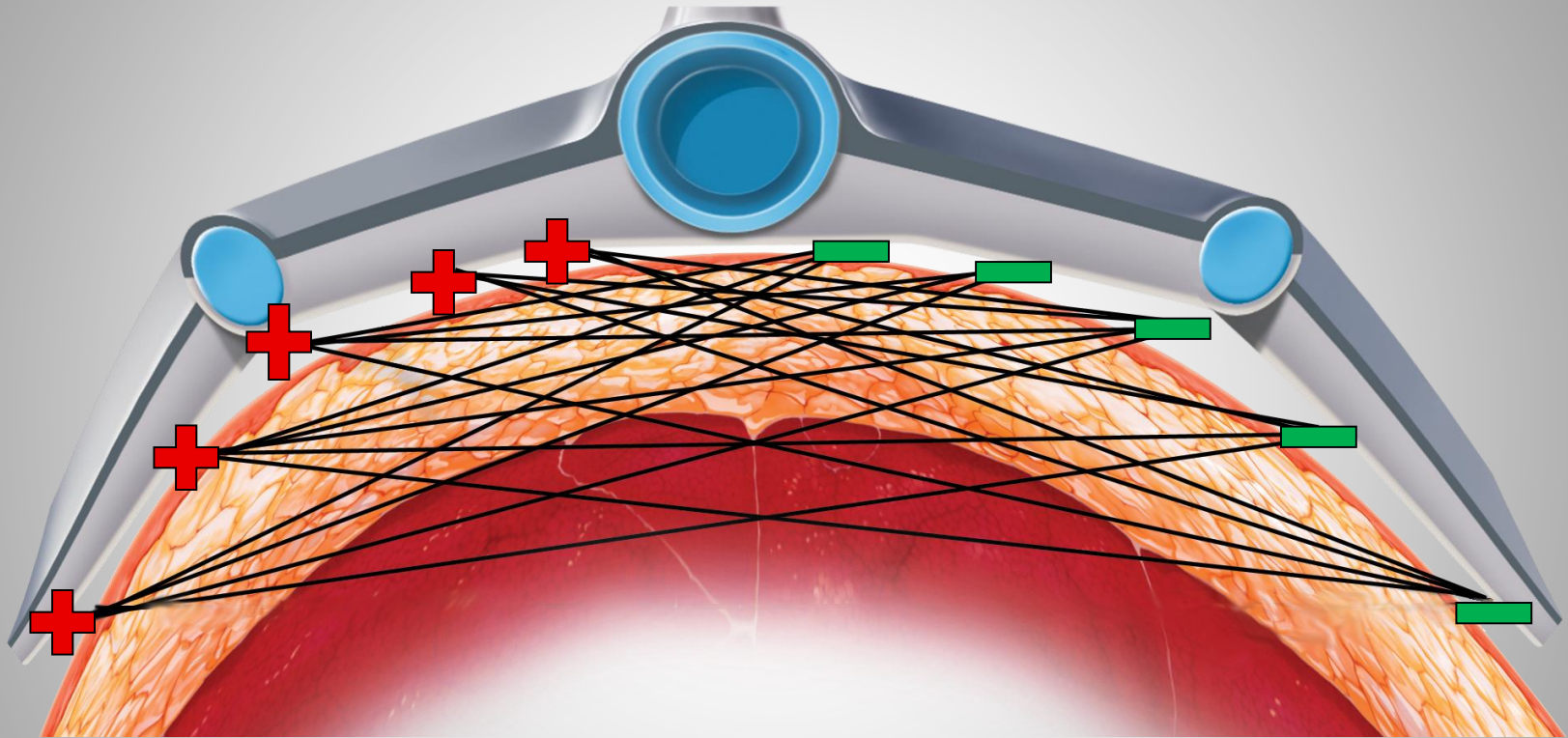
# Treatment & Costs

- Device \$89,000
- Disposables \$25 per patient (reusable spacer)
- Technician Needs to be present
- Area Average abdomen +/- lateral
- Treatment 30 min/session
- Sessions 4-6
- Cost \$750/session (\$3000 to \$4500)

# Non-Contact External RF Energy Delivery

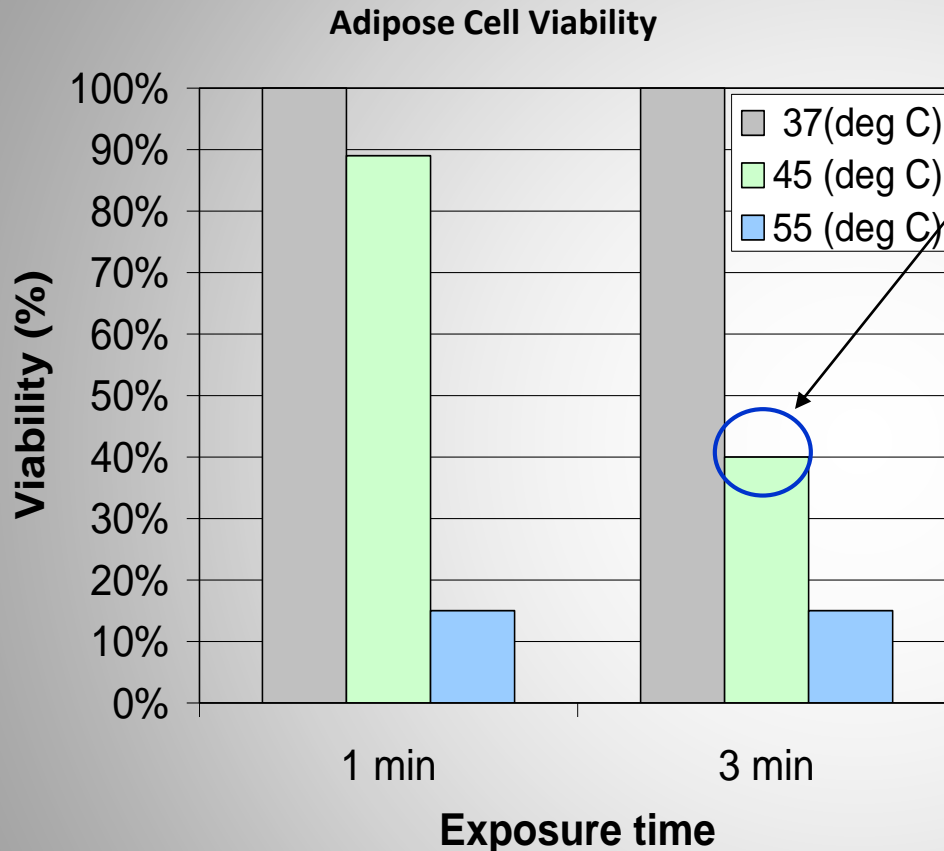


# Multipolar Radiofrequency Array



Large homogeneous treatment area

# RF Effects on Adipose Tissue



45°C x 3 minutes = 60% loss of adipose cell viability<sup>1, 2</sup>

Skin temperatures at 45°C can be sustained for >120 minutes without irreversible damage<sup>3</sup>

3 minute deep heating induces cell apoptosis and cell removal

1 Walfre Franco, PhD, Amogh Kothare, MS, and David J. Goldberg, MD. Controlled Volumetric Heating of Adipose Tissue Using a Novel Radiofrequency Technology. *Lasers in Surgery and Medicine* 41:745–750 (2009).

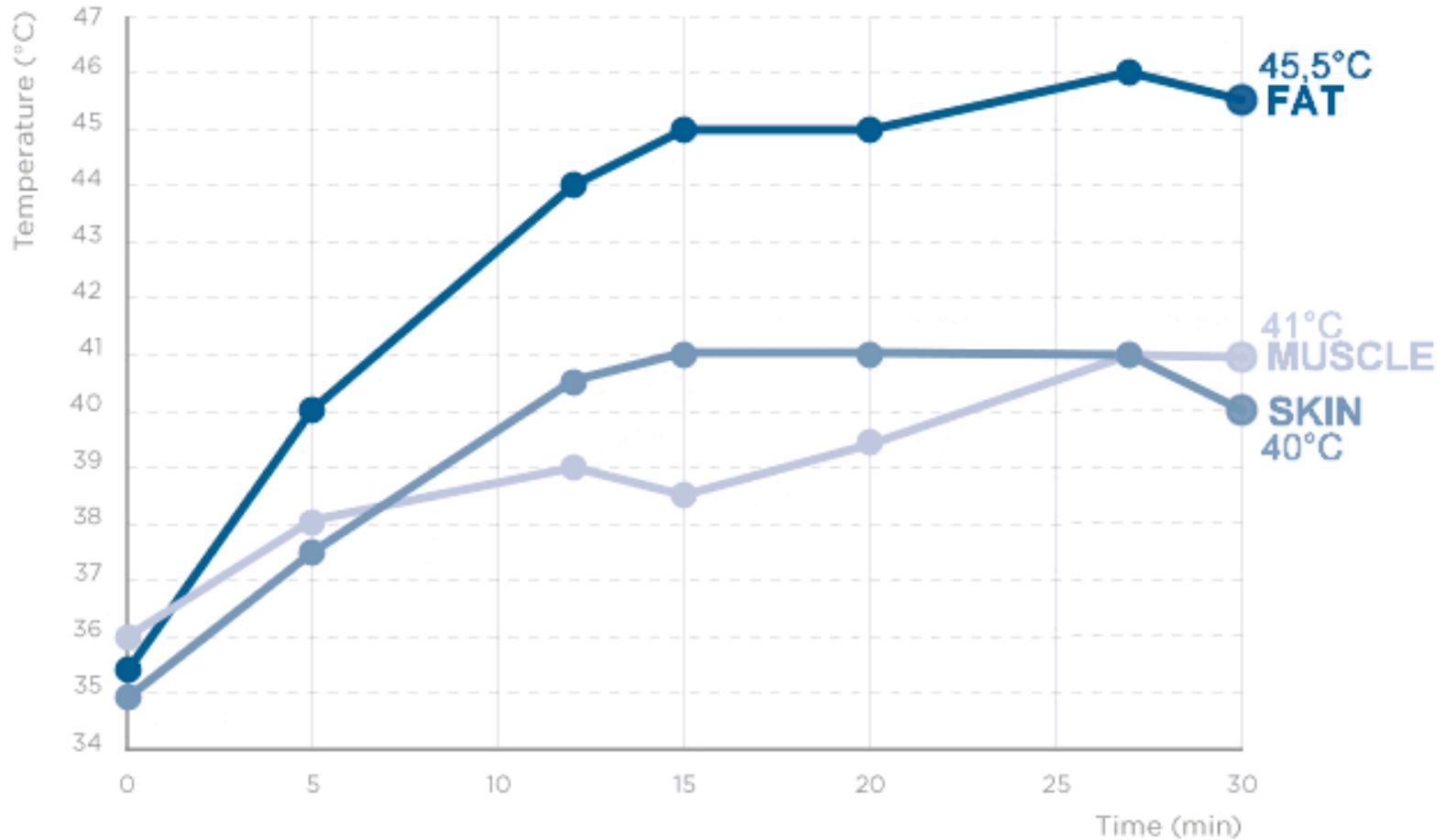
2 Walfre Franco, PhD, Amogh Kothare, MS, Stephen J. Ronan, MD, FACS, Roy C. Grekin, MD and Timothy H. McCalmont, MD. Hyperthermic Injury to Adipocyte Cells by Selective Heating of Subcutaneous Fat with a Novel Radiofrequency Device: Feasibility Studies. *Lasers in Surgery and Medicine* 42:361–370 (2010).

3 Henriques F.C. Jr., Studies of thermal injury; the predictability and the significance of thermally induced rate processes leading to irreversible epidermal injury. *Arch Pathol* 1947 May;43(5):489-502.





# Vanquish & Tissue Temperature

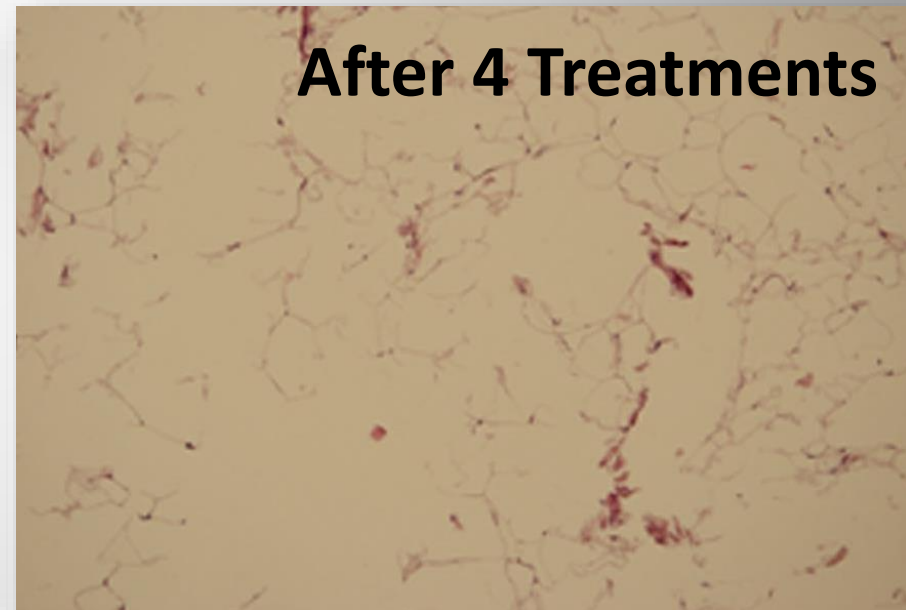
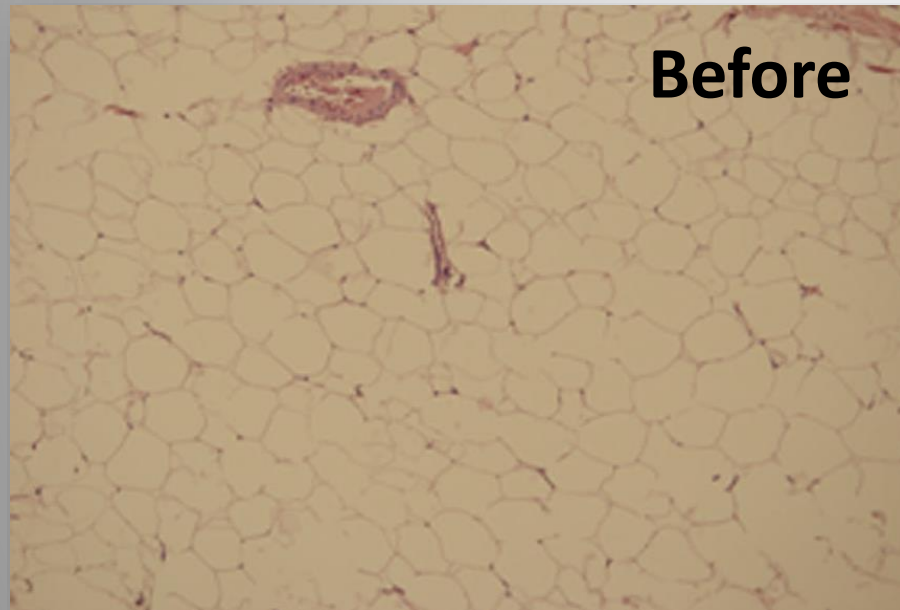


# Operator Independent Focused High Frequency ISM Band for Fat Reduction: Porcine Model

Robert Weiss, MD, FAAD, FACPh,\*<sup>1</sup> Margaret Weiss, MD, FAAD,<sup>1</sup> Karen Beasley, MD, FAAD,<sup>1</sup>  
Jan Vrba, PhD,<sup>2</sup> and Jan Bernardy, PhD<sup>2</sup>

<sup>1</sup>MD Laser, Skin & Vein Institute, Baltimore, Maryland

<sup>2</sup>Czech Technical University, Prague, Czech Republic



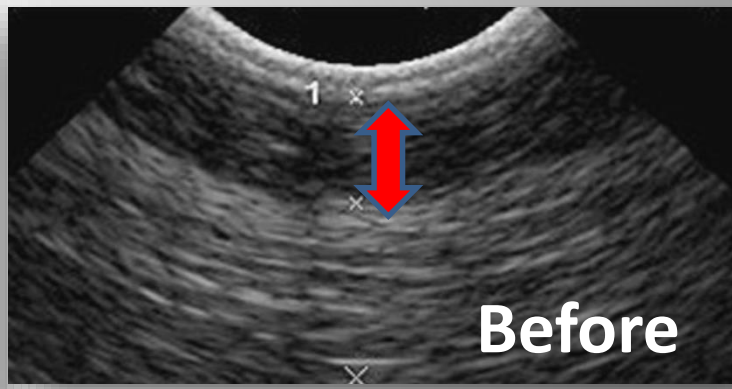
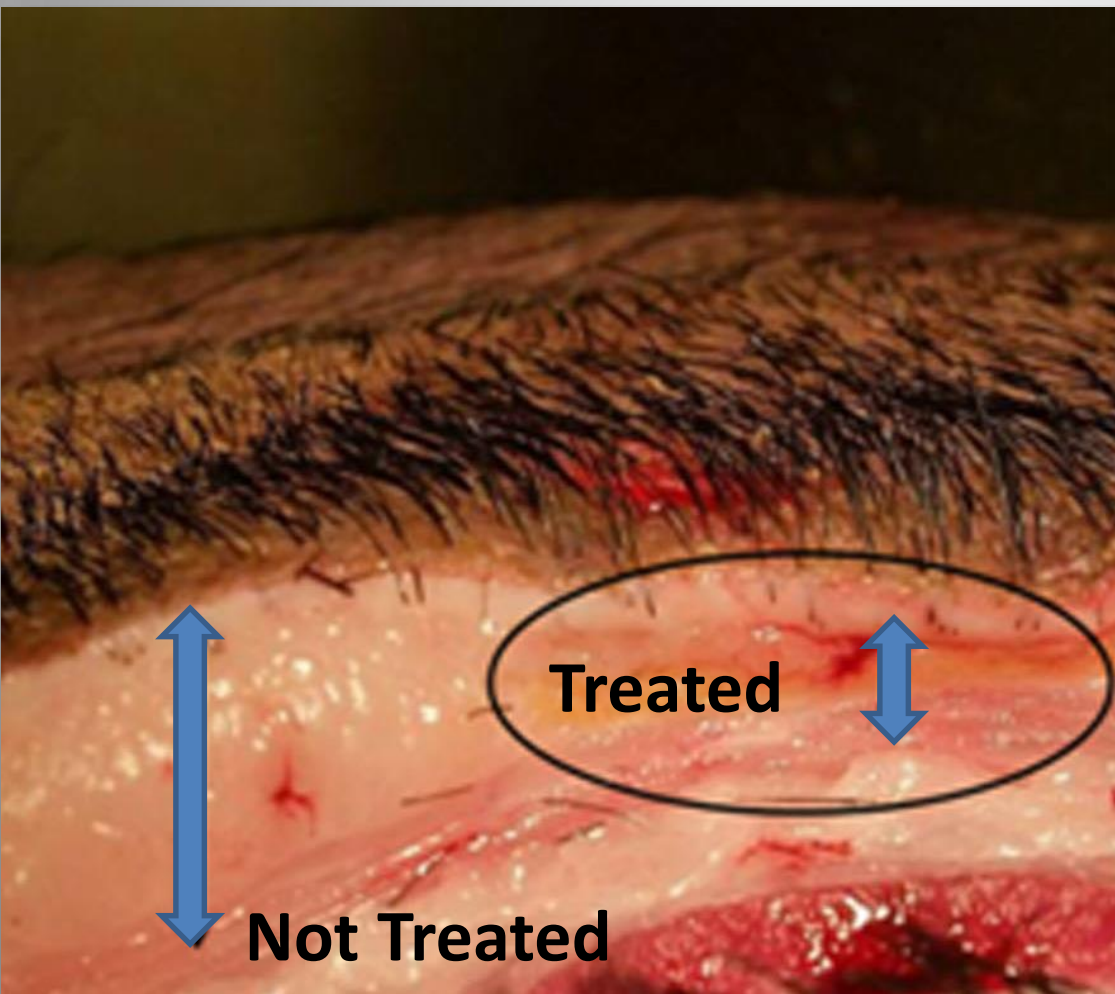
**No effect on serum glucose, bilirubin,  
BUN, ALT, AST, TG, HDL, LDL, TC**

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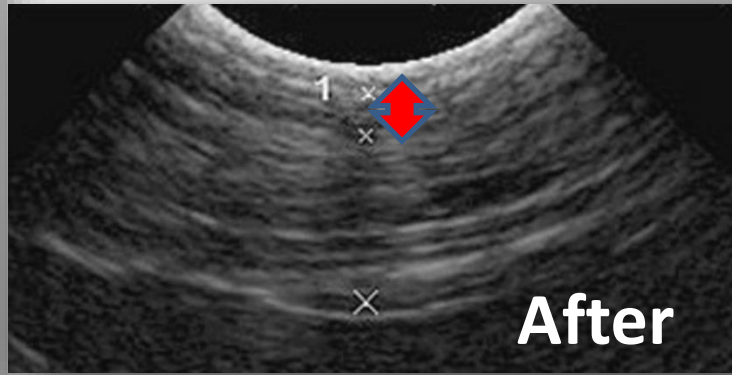
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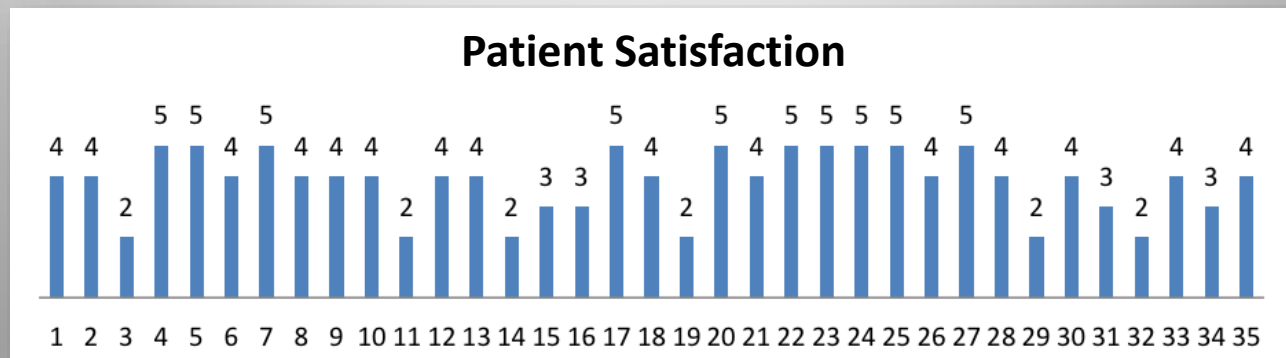
4.7 cm fat reduction



# Selective Radiofrequency Therapy as a Non-Invasive Approach for Contactless Body Contouring and Circumferential Reduction

Kateřina Fajkořov MUDr,<sup>a</sup> Alena Machovcov MD PhD MBA,<sup>b,c</sup> Meltem Onder MD,<sup>d</sup> and Klaus Fritz MD<sup>d,e</sup>

- 30 min session /week x 4 weeks
- 40 patients enrolled – 35 completed protocol
- 32 patients: 1 to 13 cm abdominal girth drop
- 5 cm average drop
- 3 thin patients – no effect (best results in high BMI)



Selective Radiofrequency Therapy as a Non-Invasive  
Approach for Contactless Body Contouring and  
Circumferential Reduction

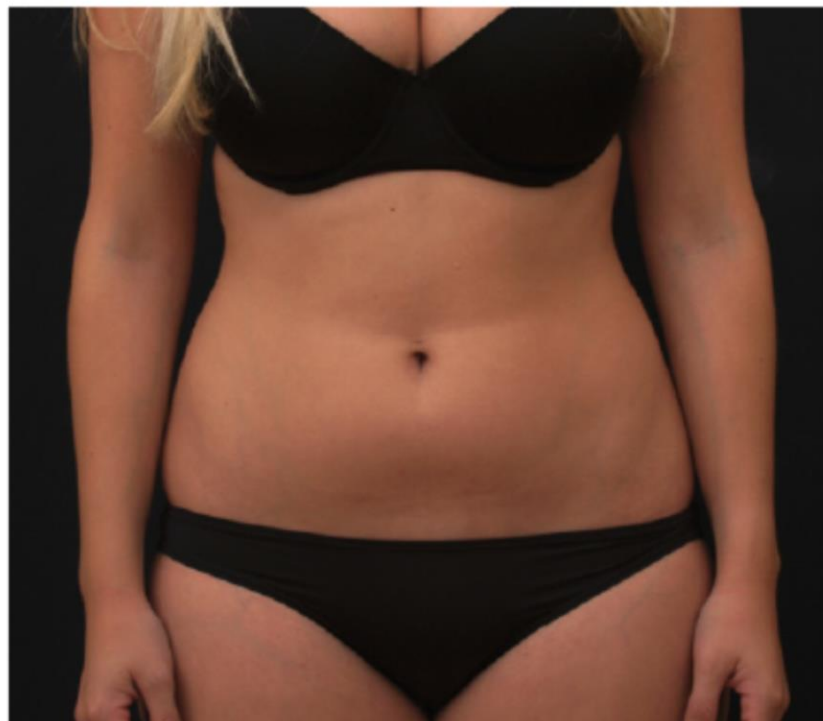
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Treatment	Before 1 <sup>st</sup> treatment	After 4 <sup>th</sup> treatment
Weight (kg)	79	77
BMI	26.09	25.43
Circumference (cm)	109	96

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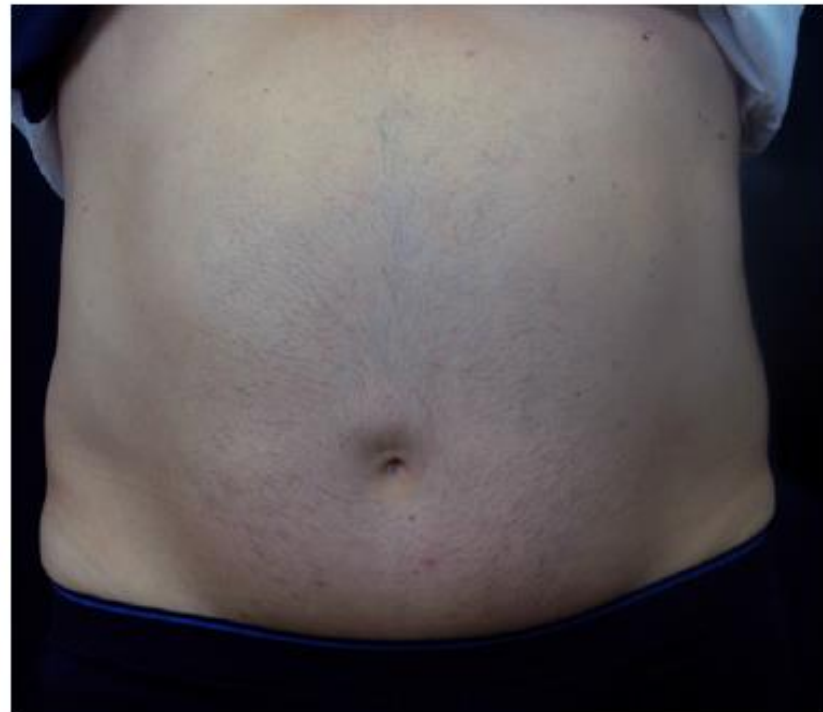
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Treatment	Before 1 <sup>st</sup> treatment	After 4 <sup>th</sup> treatment
Weight (kg)	67.7	67
BMI	24.86	24.61
Circumference (cm)	84	77

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Treatment	Before 1 <sup>st</sup> treatment	After 4 <sup>th</sup> treatment
Weight (kg)	91	89.2
BMI	29.37	28.79
Circumference (cm)	113	106

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Treatment	Before 1 <sup>st</sup> treatment	After 4 <sup>th</sup> treatment
Weight (kg)	84	83.2
BMI	26.51	26.25
Circumference (cm)	110	103



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Treatment	Before 1 <sup>st</sup> treatment	After 4 <sup>th</sup> treatment
Weight (kg)	79.3	77.6
BMI	29.12	28.50
Circumference (cm)	101	93

Selective Radiofrequency Therapy as a Non-Invasive  
Approach for Contactless Body Contouring and  
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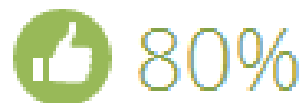
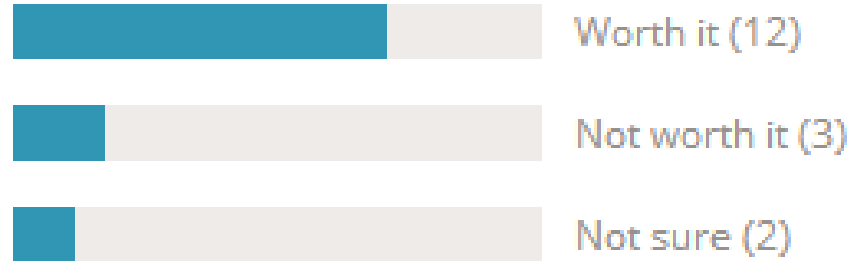
Treatment	Before 1 <sup>st</sup> treatment	After 4 <sup>th</sup> treatment
Weight (kg)	75	72.2
BMI	25.65	24.69
Circumference (cm)	93	90

# RealSelf Rating

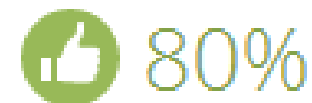
## VANQUISH WORTH IT RATING DETAILS



WORTH IT RATING  
BASED ON 20 REVIEWS



BASED ON 17  
REVIEWS IN THE LAST  
24 MONTHS



BASED ON 17  
REVIEWS IN THE LAST  
12 MONTHS

# Personal Experience

- Minimal discomfort (can sleep)
  - Few areas of “hot spots”
- Useful treatment area size
- Instructed to drink water before & after treatment
  - Eliminate dead fat cells
  - Maintain high metabolic turnover
- May result in focal panniculitis
  - Conservative treatment
- Headache, malaise, GI distress first 24 hours?
- No visible change after 2 treatments but need 4-6

# Vanquish Summary

- Another radiofrequency heating device
  - Demonstrated fat reduction
  - External & no-touch energy delivery
- Technician required
  - Not technician dependent
- No data on tissue tightening
- May use on extremities

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