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 ≥ 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 viability¹, ²

Skin temperatures at 45°C can be sustained for >120 minutes without irreversible damage³

3 minute deep heating induces cell apoptosis and cell removal

Adipose Cell Viability

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Viability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>45</td>
<td>60%</td>
</tr>
<tr>
<td>55</td>
<td>50%</td>
</tr>
</tbody>
</table>

Exposure time

Vanquish & Tissue Temperature

Temperature (°C) vs. Time (min)

- **FAT**: 45.5°C
- **MUSCLE**: 41°C
- **SKIN**: 40°C

The graph illustrates the temperature increase over time for fat, muscle, and skin tissues.
No effect on serum glucose, bilirubin, BUN, ALT, AST, TG, HDL, LDL, TC
Operator Independent Focused High Frequency ISM Band for Fat Reduction: Porcine Model

Robert Weiss, MD, FAAD, FACPh,*1 Margaret Weiss, MD, FAAD,¹ Karen Beasley, MD, FAAD,¹
Jan Vrba, PhD,² and Jan Bernardy, PhD²
¹MD Laser, Skin & Vein Institute, Baltimore, Maryland
²Czech Technical University, Prague, Czech Republic
• 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)
### Treatment Results

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Before 1\textsuperscript{st} treatment</th>
<th>After 4\textsuperscript{th} treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg)</td>
<td>79</td>
<td>77</td>
</tr>
<tr>
<td>BMI</td>
<td>26.09</td>
<td>25.43</td>
</tr>
<tr>
<td>Circumference (cm)</td>
<td>109</td>
<td>96</td>
</tr>
<tr>
<td>Treatment</td>
<td>Before 1st treatment</td>
<td>After 4th treatment</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>67.7</td>
<td>67</td>
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<tr>
<td>BMI</td>
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<td>24.61</td>
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<tr>
<td>Circumference (cm)</td>
<td>84</td>
<td>77</td>
</tr>
<tr>
<td>Treatment</td>
<td>Before 1&lt;sup&gt;st&lt;/sup&gt; treatment</td>
<td>After 4&lt;sup&gt;th&lt;/sup&gt; treatment</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>91</td>
<td>89.2</td>
</tr>
<tr>
<td>BMI</td>
<td>29.37</td>
<td>28.79</td>
</tr>
<tr>
<td>Circumference (cm)</td>
<td>113</td>
<td>106</td>
</tr>
<tr>
<td>Treatment</td>
<td>Before 1\textsuperscript{st} treatment</td>
<td>After 4\textsuperscript{th} treatment</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>84</td>
<td>83.2</td>
</tr>
<tr>
<td>BMI</td>
<td>26.51</td>
<td>26.25</td>
</tr>
<tr>
<td>Circumference (cm)</td>
<td>110</td>
<td>103</td>
</tr>
</tbody>
</table>
Selective Radiofrequency Therapy as a Non-Invasive Approach for Contactless Body Contouring and Circumferential Reduction

Katrina Fabiolesi MD, Alex Machovski MD PhD MBA, Medios Under MD, and Khan Fritz ME
### Selective Radiofrequency Therapy as a Non-Invasive Approach for Contactless Body Contouring and Circumferential Reduction

Katrina Farsentes MD, Alina Machowski MD PhD MBA, Mokhtar Onder MD, and Klaim Fritz MEP

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Before 1st treatment</th>
<th>After 4th treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (kg)</td>
<td>75</td>
<td>72.2</td>
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<tr>
<td>BMI</td>
<td>25.65</td>
<td>24.69</td>
</tr>
<tr>
<td>Circumference (cm)</td>
<td>93</td>
<td>90</td>
</tr>
</tbody>
</table>
RealSelf Rating

Vanquish Worth It Rating Details

80% Worth It Rating based on 20 reviews

- Worth it (12)
- Not worth it (3)
- Not sure (2)

80% based on 17 reviews in the last 24 months

80% 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
Vanquish
External Radiofrequency for Fat Reduction

Karol A Gutowski, MD, FACS
Premier Global Hot Topics