WELCOME TO KEY LASER
THE CENTER FOR COSMETIC REGENERATIVE MEDICINE
Why Slimming?

Eliminating fat cells or tightening structure?

We may be doing both with Thermi250™.
A PRELIMINARY STUDY OF A TRANSDERMAL RADIOFREQUENCY DEVICE FOR BODY SLIMMING

Douglas J. Key MD

Specific Absorption Rate Equation

\[ \text{SAR} = \frac{\sigma}{\rho} |E|^2 = \frac{1}{\sigma \rho} |J|^2 \]
The Larger the Transducer, The Greater the Depth

100mm Electrode Depth Of Sustained Heating

= 5 Centimeters Depth

“Rough” Formula
Question: With the 100mm transducer, is there sufficient depth for thermal effect to reduce visceral fat?
### Transdermal RF for Body Slimming Treatment Results Data Table

<table>
<thead>
<tr>
<th>Pt.</th>
<th>Correct Order?</th>
<th>A</th>
<th>B</th>
<th>Variance</th>
<th>Correct Order?</th>
<th>A</th>
<th>B</th>
<th>Variance</th>
<th>Zones Treated</th>
<th>Default Temp (°C)</th>
<th>Tx Time (Min)</th>
<th>FU</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW</td>
<td>Y</td>
<td>3.5</td>
<td>2.5</td>
<td>1</td>
<td>Y</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>44</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>SN</td>
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<td>2</td>
<td>1.5</td>
<td>0.5</td>
<td>Y</td>
<td>1.5</td>
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<td>0.5</td>
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<td>44-45</td>
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<tr>
<td>PW</td>
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<td>1</td>
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<td>Y</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>45</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>DM</td>
<td>Y</td>
<td>2.5</td>
<td>2</td>
<td>0.5</td>
<td>Y</td>
<td>2</td>
<td>1.5</td>
<td>0.5</td>
<td>2</td>
<td>43</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
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<td>1</td>
<td>1</td>
<td>Y</td>
<td>1.5</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>45</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
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<td>2</td>
<td>1.5</td>
<td>0.5</td>
<td>Y</td>
<td>1.5</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>45</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
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<td>2.5</td>
<td>0.5</td>
<td>Y</td>
<td>2</td>
<td>1</td>
<td>1</td>
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<td>45</td>
<td>15</td>
<td>2</td>
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<td>1.5</td>
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<td>2.5</td>
<td>1</td>
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<td>1.5</td>
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<td>2</td>
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<td>10</td>
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</tr>
<tr>
<td>SO</td>
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<td>0</td>
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<td>1.5</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>43</td>
<td>10</td>
<td>4</td>
</tr>
</tbody>
</table>

**Mean Variance:**
- Examiner 1: 0.75
- Examiner 2: 0.8

* Journal Of Drugs In Dermatology, November 2015

\* A = Score before Treatment; B = Score at follow-up evaluation; FU = follow-up (mo.); mean variance values are listed for the patient subset of 10 for which both examiners successfully ordered before and after photographs.
A Preliminary Study Of A Transdermal Radiofrequency Device For Body Slimming*

Patient survey results included an average tightening of 2.14 points on a 0 to 4 scale (0 lowest, 4 highest). Of the 14 subjects, 8 said they’d recommend treatment to a friend.

### Patient Survey Data Table with Average Variance

<table>
<thead>
<tr>
<th>Subj.</th>
<th>Average Variance</th>
<th>Perceived Tightening</th>
<th>Slimming Observed?</th>
<th>Recommend to a Friend?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW</td>
<td>2</td>
<td>3</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>SN</td>
<td>2</td>
<td>2</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>PW</td>
<td>1</td>
<td>4</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>DM</td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>SG</td>
<td>1</td>
<td>3</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>PM</td>
<td>1</td>
<td>2</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>KW</td>
<td>1</td>
<td>4</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>KC</td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>LB</td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
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<td>SO</td>
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<td>4</td>
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<td>Y</td>
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<td>RB</td>
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<td>N</td>
<td>N</td>
</tr>
<tr>
<td>TC</td>
<td>1</td>
<td>4</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Average variance is based on a scale of 0 to 4 in increments of 0.5; Perceived Tightening was rated by patients on a 0 to 4 scale in which 0 was the least ad 4 was the most tightening.

* Journal Of Drugs In Dermatology, November 2015
A Preliminary Study Of A Transdermal Radiofrequency Device For Body Slimming*

Scoring for Successful Results Subset When Treated With Transdermal RF

| Subj. | Examiner 1 Scoring | | Examiner 2 Scoring | | FU (mo) | | Tightening Score |
|-------|-------------------|---|-------------------|---|----------|------------------|
|       | A | B | Variance | A | B | Variance | | |
| NW    | 3.5 | 2.5 | 1 | 3 | 2 | 1 | 6 | 3 |
| SN    | 2 | 1.5 | 0.5 | 1.5 | 1 | 0.5 | 2 | 2 |
| PW    | 2.5 | 1 | 1.5 | 2 | 1 | 1 | 4 | 4 |
| DM    | 2.5 | 2 | 0.5 | 2 | 1.5 | 0.5 | 2 | 1 |
| SG    | 2 | 1 | 1 | 1.5 | 1 | 0.5 | 2 | 3 |
| PM    | 2 | 1.5 | 0.5 | 1.5 | 1 | 0.5 | 4 | 2 |
| KW    | 3 | 2.5 | 0.5 | 2 | 1 | 1 | 2 | 4 |
| KC    | 3.5 | 2 | 1.5 | 2.5 | 1 | 1.5 | 3 | 1 |
| LB    | 3.5 | 3 | 0.5 | 2.5 | 1.5 | 1 | 6 | 1 |
| SO    | 1.5 | 1.5 | 0 | 1.5 | 1 | 0.5 | 4 | 4 |

\[ p = 0.0039 \text{ (s)} \]

\[ \text{Median} = 0.50 \text{ (0.54)*} \]

\[ p = 0.0020 \text{ (s)} \]

\[ \text{Median} = 0.75 \text{ (0.50)*} \]

\[ \text{Median} = 3.5 \text{ (2.17)*} \]

\[ \text{Mean} 2.50 \pm 1.27 \text{ (SD)} \]

A = Score before Treatment; B = Score at follow-up evaluation; FU = follow-up (mo.); SD = standard deviation.

*Interquartile range, a measure if statistical dispersion, or the difference between the upper and lower quartiles.

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Large Dimensional Transducer Transdermal Skin Tightening and Slimming

Thermi250 4 Treatments Abdomen

1 Month Post Treatment
Large Dimensional Transducer Transdermal Skin Tightening and Slimming

Thermi250 4 Treatments Abdomen

Before 7-2014

After 10-2014

1 Month Post Treatment
Large Dimensional Transducer Transdermal Skin Tightening and Slimming

Thermi250 4 Treatments Abdomen

Before
7-2014

After
10-2014

1 Month Post Treatment
Large Dimensional Transducer Transdermal Skin Tightening and Slimming

Results Improve The Longer You Wait

Thermi250 4 Treatments Abdomen

8 Months Post Treatment
Large Dimensional Transducer Transdermal Skin Tightening and Slimming

Results Improve The Longer You Wait

Thermi250 4 Treatments Abdomen

4 Months Post Treatment
Large Dimensional Transducer Transdermal Skin Tightening and Slimming

Results Improve The Longer You Wait

Thermi250 4 Treatments Abdomen

Baseline

8 Months Post Treatment

8 Months Post Treatment
Results Improve The Longer You Wait

Thermi250 4 Treatments Abdomen

Baseline

10 Months Post Treatment

10 months post
Method of Treatment

Zone Size

• Zone size should be the size of an 8x10 piece of paper or 2 hand spans.

• Multiple zones can be treated during the same treatment time.
Method of Treatment

Medium Used

Parker Scan® Ultrasound Gel

- Pre-warmed to a temp of 41.1
- A very thin layer is best
Method of Treatment

Target Temperature

Target temperature is 45°C

At 45°C there can be occasions where the skin can transiently exceed the preset guidelines.

There is concern that with a preset of anything higher (i.e. 47°C) skin temperature may exceed the preset with the possibility greater risk of injury.
Method of Treatment

Treatment time

• Treatment should be a total of 15 minutes.
  *This includes a 1 minute warm up using pre-warmed gel.
  *Skin temperature reaches target temperature quickly.

• Slow, continuous circular motion.

• If patient feels a “hot spot” speed up circular motion.
Controversies

Treatment at target temperature in excess of 45°C may need to be explored for the end points to improve clinical outcomes and shorten treatment times.
Method of Treatment

Number of Treatments

We would suggest 4 to 6 treatments but this is patient dependent.

With extended observation beyond 3 months… continued improvement and maximum benefits can be seen for 6 and 9 months.
Method of Treatment

Electrode Choice

Abdomen: 100mm or 80mm

Thigh: 100mm, 80mm or 70mm
Large Dimensional Transducer Transdermal Skin Tightening and Slimming
Large Dimensional Transducer Transdermal Skin
Tightening and Slimming
Large Dimensional Transducer Transdermal Skin Tightening and Slimming

8/13/14

4/9/15
Why not treat it all?

- Abdomen for slimming
- Arms for tightening
- Legs for cellulite
- Face and Neck for tightening & lift
- Breast for tightening & lift
- Bra Fat for slimming
“ThermiRF is proving to be the most versatile and effective thermal energy platform that I have ever used.”

-Douglas Key, MD
New Edge...

Oculo-Plastik eye shields for ThermiSmooth Eyes

www. oculoplastik.com