Based on a meta-analysis of HARMONIC FOCUS® (HF) versus clamp, cut and tie, where HF reduced OR time, intra-operative blood loss, length of stay and drainage volume (all p ≤ 0.01). Cheng et al., A systematic review and meta-analysis of Harmonic Focus in thyroidectomy compared to conventional techniques. Thyroid Research (2015) 8:15.

As per a literature search conducted by Ethicon in Scopus between 01/01/2008 and 05/11/2016.

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In a preclinical rat model that compared cold scissors, HARMONIC ACE®, HARMONIC FOCUS® and monopolar electrosurgery (MES). Incision with cold scissors, HARMONIC ACE®+ and HARMONIC FOCUS® at 2mm from the sciatic nerve were not different via compound action potential (1621, 1519, 1803 mV-ms), conduction velocity (61.8, 62.3, 60.3 mm/ms), depolarization time (229.5, 211.6, 248.1 micro secs), repolarization time (2687, 2435, 2650 micro secs), vForce (20.2, 17.0, 19.1 g), dForce (24.0, 21.4, 27.7 g) and beta-APP (12.6, 18.1, 18.6 % incidence), respectively (p-value for all >0.05). At 2mm from the sciatic nerve, MES resulted in significantly slower conduction velocity (58.5 mm/ms), longer depolarization time (283.1 micro secs), longer repolarization time (4150 micro secs) and higher incidence of beta-APP infiltration (31.8 % incidence) than cold scissors (p-value for all <0.05). (Note: p-values are comparison to cold scissors).

Cheng H et al., Hospital costs associated with thyroidectomy performed with a Harmonic device compared to conventional techniques: a systematic review and meta-analysis. J Med Econ. 2016 Apr 5:1-9. [Epub ahead of print].

HARMONIC FOCUS® technology has been evaluated in more peer-reviewed clinical articles than LigaSure™ Small Jaw and LigaSure™ Exact combined.

HARMONIC® technology, the proven leader in advanced energy with more than 22 million procedures worldwide.

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### Enables precise energy delivery, efficiency and superior clinical outcomes

<table>
<thead>
<tr>
<th>Speed</th>
<th>Hemostasis</th>
<th>Critical structures</th>
<th>Cost savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced total operative time by 31%&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Reduced intraoperative blood loss by 45ml&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Same nerve function following use at 2mm from sciatic nerve&lt;sup&gt;5&lt;/sup&gt;</td>
<td>Reduced total operative costs by 10%&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

- **Speed**: 31% (p<0.001)
- **Hemostasis**: 45ml (p<0.001)
- **Critical structures**: No difference
- **Cost savings**: 10% (p=0.007)

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The delivery of energy is key

The effects of “radiated” electrical energy when activated 2mm from a nerve. Compared to Ligasure™ Small Jaw, in a preclinical rat model HARMONIC FOCUS®+ Shears exhibited:

- 57% less nerve inflammation
- 50% less nerve damage

Designed for head and neck surgery

HARMONIC FOCUS®+ Shears were designed with a small profile to provide precise dissection and delivery of energy in tight spaces.

HARMONIC FOCUS®+ Shears vs. LigaSure™ Exact

<table>
<thead>
<tr>
<th>Active blade width</th>
<th>Clamp arm width</th>
<th>Jaw height</th>
<th>Jaw aperture</th>
</tr>
</thead>
<tbody>
<tr>
<td>37% narrower²</td>
<td>10% thinner²</td>
<td>22% smaller²</td>
<td>98% greater²</td>
</tr>
<tr>
<td>active blade at the</td>
<td>clamp arm at the</td>
<td>jaw height at</td>
<td>jaw aperture</td>
</tr>
<tr>
<td>distal tip</td>
<td>distal tip</td>
<td>the distal tip</td>
<td></td>
</tr>
</tbody>
</table>

The power of Adaptive Tissue Technology’s thermal management

Adaptive Tissue Technology enables more precise energy delivery and improved temperature management.

Comparison of the 20th consecutive transection on porcine jejunum.

For more information, contact your local Ethicon sales professional or go to www.ethicon.com

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1 As exhibited in a preclinical rat model when activating 2mm away from the sciatic nerve. Inflammatory cell presence measured via H&E staining - 9.2% (HAR9F) vs. 21.4% (SJ), p=0.005.
2 As exhibited in a preclinical rat model when activating 2mm away from the sciatic nerve. Mean nerve damage assessed as axonal transport impairment: 12.2% (HAR9F) vs. 24.3% (SJ), p<0.001.
3 Metrology study comparing the width of the distal end of the active blade for HARMONIC FOCUS®+ vs Ligasure™ Exact (1.37mm vs 2.19mm).
4 Metrology study comparing the width of the clamp arm at the distal end for HARMONIC FOCUS®+ and Ligasure™ Exact (1.98mm vs 2.19mm).
5 Metrology study comparing distal jaw height of HARMONIC FOCUS®+ vs Ligasure™ Exact (2.82mm vs 3.62mm).
6 Metrology study comparing the jaw aperture of HARMONIC FOCUS®+ vs Ligasure™ Exact (23.4mm vs 11.8mm).
7 vs. HARMONIC ACE® without Adaptive Tissue Technology.
8 Benchtop thermal testing comparing HARMONIC FOCUS®+ and Ligasure™ Exact. No statistically significant difference existed (95% confidence interval for difference in median clamp arm temperature: -5.0 to 1.0 °C).