In adults with Lateral Elbow Tendinopathy (Tennis Elbow) does the treatment of Low Level Laser Therapy improve pain and function when compared to usual physiotherapy care

**Clinical bottom line**

Low Level Laser therapy administered with an optimal dose of 904nm wavelength (recommended by World Association of Laser therapy- WALT) directly to the lateral elbow tendon insertions, offers short-term pain relief and reduced disability in adults with lateral Elbow Tendinopathy, both alone and in conjunction with an exercise regimen.

WALT also recommend a peak pulse output >1 Watt and a power density of less than 100 mW/cm2

**Why is this important?**

Low Level Laser Therapy is used by some clinicians to treat patients with Tennis elbow. It was therefore important to establish the evidence for the use of this modality for improving pain and function with patients with Tennis Elbow.

**Inclusion Criteria**

<table>
<thead>
<tr>
<th>Population and Setting</th>
<th>Description</th>
<th>Search terms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male and female adults with Lateral Elbow tendinopathy.</td>
<td>Tendinopathy, Laser therapy, Low level laser therapy, Tennis elbow, lateral elbow tendiopathy, tendon injury, tendonitis, tenosynovitis</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention or Exposure (ie what is being tested)</th>
<th>Description</th>
<th>Search terms</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Low Level Laser therapy</td>
<td>Laser therapy, Low level laser therapy</td>
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<table>
<thead>
<tr>
<th>Comparison, if any</th>
<th>Description</th>
<th>Search terms</th>
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<tbody>
<tr>
<td></td>
<td>Usual Physiotherapy care</td>
<td>Physiotherapy, Physical Therapy</td>
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<th>Outcomes of interest</th>
<th>Description</th>
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<tr>
<td></td>
<td>Pain, function, return to work, Quality of life, medical consultations</td>
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<table>
<thead>
<tr>
<th>Types of studies</th>
<th>Description</th>
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<tr>
<td></td>
<td>SR &amp; RCTs only Observational studies if no RCTs</td>
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</table>

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### Databases Searched

<table>
<thead>
<tr>
<th>Databases Searched</th>
<th>Date of last search</th>
<th>No. downloaded</th>
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<td>Clinical Knowledge Summaries</td>
<td>August 2012</td>
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<tr>
<td>PEDro</td>
<td>August 2012</td>
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<tr>
<td>BMJ Updates</td>
<td>August 2012</td>
<td>10</td>
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<tr>
<td>Clinical Evidence</td>
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<td>TRIP Database</td>
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<td>NICE</td>
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<td>Web of Knowledge</td>
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<tr>
<td>Bandolier</td>
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<td>The Cochrane Library</td>
<td>August 2012</td>
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<td>Medline</td>
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<td>Cinahl</td>
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<td>Embase</td>
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<td>Ahmed</td>
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<tr>
<td>Guideline</td>
<td>August 2012</td>
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</tbody>
</table>

### Results

- **80 unique studies downloaded**
- **18 potentially relevant**
- **2 included studies**
- **16 excluded studies**

### Study Details

<table>
<thead>
<tr>
<th>First Author, year and type of study</th>
<th>Population and setting</th>
<th>Intervention or exposure tested</th>
<th>Study results</th>
<th>Assessment of quality and comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tumility (2010) Systematic Review</td>
<td>Adults with Tendinopathy</td>
<td>Laser Therapy</td>
<td>Strong evidence that Laser Therapy is effective for treatment of Tendinopathy</td>
<td>Good</td>
</tr>
<tr>
<td>Bjordal (2008) Systematic Review</td>
<td>Adults with Tennis Elbow</td>
<td>Laser Therapy</td>
<td>Strong evidence that Laser Therapy is effective for treatment of Tennis Elbow.</td>
<td>Good</td>
</tr>
</tbody>
</table>

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Summary

Tumility et al (2010) searched RCTs and Controlled Clinical Trials (CCTs) up to 2008, there was evidence of clear inclusion and exclusion criteria, results reported pain, function and recovery. 3 independent reviewers assessed the included articles for methodological quality using the PEDro scale. Low Level Laser Therapy was shown to be effective in treating tendinopathy when recommended dosages were used. The 12 positive studies provide strong evidence that positive outcomes are associated with the use of current dosage recommendations for the treatment of tendinopathy.

Bjordal et al (2008) searched RCT’s and there was evidence of clear inclusion and exclusion criteria, results reported pain, health status and grip strength. Trials were assessed for the included articles for methodological quality using a 10 point PEDro checklist.

The positive studies provide evidence that Low Level Laser therapy administered with an optimal dose of 904nm wavelength directly to the lateral elbow tendon insertions, offers short-term pain relief and reduced disability in adults with lateral Elbow Tendinopathy, both alone and in conjunction with an exercise regimen. These findings contradict the findings of previous reviews which failed to assess treatment procedures, wavelengths and optimal doses.

Only 2 studies presented the results of medium term outcomes for Low Level Laser Therapy which showed positive results up to 24 weeks

Conclusions

The positive results for combining the Low Level Laser Therapy with an exercise regime were encouraging (Bjordal et al 2008). Adding Low Level Laser Therapy to a regime of eccentric and stretching exercises reduced recovery time in 2 trials. Therefore Low Level Laser Therapy could be considered as an adjunct to exercise therapy.

However positive results were only reported in those trials that used the recommended WALT guideline. Therefore discussions with clinicians who regularly use Low Level Laser Therapy would be beneficial to ensure the correct WALT doses are used

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References

