

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?

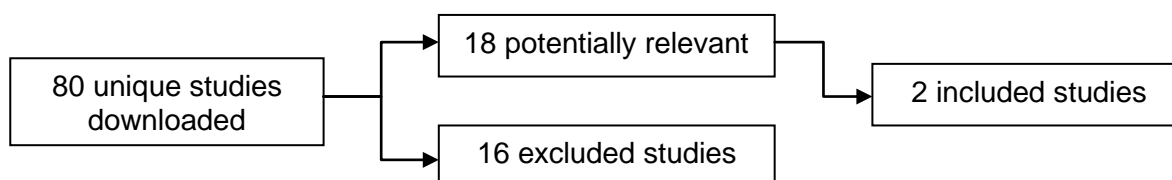
Low Level Laser Therapy is used by some clinicians to treat patients with Tennis elbow. It was therefore important to establish the evidence for the use of this modality for improving pain and function with patients with Tennis Elbow.

Inclusion Criteria

	Description	Search terms
Population and Setting	Male and female adults with Lateral Elbow tendinopathy.	Tendinopathy, Laser therapy, Low level laser therapy, Tennis elbow, lateral elbow tendiopathy, tendon injury, tendonitis, tenosynovitis
Intervention or Exposure (ie what is being tested)	Low Level Laser therapy	Laser therapy, Low level laser therapy
Comparison, if any	Usual Physiotherapy care	Physiotherapy, Physical Therapy
Outcomes of interest	Pain, function, return to work, Quality of life, medical consultations	
Types of studies	SR & RCTs only Observational studies if no RCTs	

Databases Searched	Date of last search	No. downloaded
Clinical Knowledge Summaries	August 2012	
PEDro	August 2012	6
BMJ Updates	August 2012	10
Clinical Evidence	August 2012	
TRIP Database	August 2012	
NICE	August 2012	
Web of Knowledge	August 2012	20
Bandolier	August 2012	
The Cochrane Library	August 2012	1
Medline	August 2012	17
Cinahl	August 2012	9
Embase	August 2012	18
Ahmed	August 2012	3
Guideline	August 2012	1

Results



First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Tumilty (2010) Systematic Review	Adults with Tendinopathy	Laser Therapy	Strong evidence that Laser Therapy is effective for treatment of Tendinopathy	Good
Bjordal (2008) Systematic Review	Adults with Tennis Elbow	Laser Therapy	Strong evidence that Laser Therapy is effective for treatment of Tennis Elbow.	Good

Summary

Tumilty 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

References

Tumilty S, Munn J, Mcdonough S, Hurley DA, Basford JR, Baxter D 2010 Low Level Laser Treatment of Tendinopathy: A Systematic Review with Meta-analysis. *Photomedicine and Laser Therapy* 28(1): 3-16

Bjordal, J.M, Lopes-Martins R AB, Joensen J, Coupe C, Ljunggren AE, Stergioulas A, Johnson MI 2008 A systematic review with procedural assessments and meta-analysis of Low Level Laser Therapy in Lateral Elbow Tendinopathy (tennis elbow). *BMC Musculoskeletal Disorders*, 2008 9(75): 1-15

World Association of Laser Therapy (WALT). Recommended treatment doses for Low Level Laser Therapy -Laser class 3B, 904 nm GaA Lasers. Revised 2010.