

## Low-intensity Extracorporeal Shock Wave Treatment Improves Erectile Function: A Systematic Review and Meta-analysis.

Lu Z<sup>1</sup>, Lin G<sup>2</sup>, Reed-Maldonado A<sup>2</sup>, Wang C<sup>3</sup>, Lee YC<sup>4</sup>, Lue TF<sup>5</sup>.

### Author information

### Abstract

**CONTEXT:** As a novel therapeutic method for erectile dysfunction (ED), low-intensity extracorporeal shock wave treatment (LI-ESWT) has been applied recently in the clinical setting. We feel that a summary of the current literature and a systematic review to evaluate the therapeutic efficacy of LI-ESWT for ED would be helpful for physicians who are interested in using this modality to treat patients with ED.

**OBJECTIVE:** A systematic review of the evidence regarding LI-ESWT for patients with ED was undertaken with a meta-analysis to identify the efficacy of the treatment modality.

**EVIDENCE ACQUISITION:** A comprehensive search of the PubMed and Embase databases to November 2015 was performed. Studies reporting on patients with ED treated with LI-ESWT were included. The International Index of Erectile Function (IIEF) and the Erection Hardness Score (EHS) were the most commonly used tools to evaluate the therapeutic efficacy of LI-ESWT.

**EVIDENCE SYNTHESIS:** There were 14 studies including 833 patients from 2005 to 2015. Seven studies were randomized controlled trials (RCTs); however, in these studies, the setup parameters of LI-ESWT and the protocols of treatment were variable. The meta-analysis revealed that LI-ESWT could significantly improve IIEF (mean difference: 2.00; 95% confidence interval [CI], 0.99-3.00;  $p < 0.0001$ ) and EHS (risk difference: 0.16; 95% CI, 0.04-0.29;  $p = 0.01$ ). Therapeutic efficacy could last at least 3 mo. The patients with mild-moderate ED had better therapeutic efficacy after treatment than patients with more severe ED or comorbidities. Energy flux density, number of shock waves per treatment, and duration of LI-ESWT treatment were closely related to clinical outcome, especially regarding IIEF improvement.

**CONCLUSIONS:** The number of studies of LI-ESWT for ED have increased dramatically in recent years. Most of these studies presented encouraging results, regardless of variation in LI-ESWT setup parameters or treatment protocols. These studies suggest that LI-ESWT could significantly improve the IIEF and EHS of ED patients. The publication of robust evidence from additional RCTs and longer-term follow-up would provide more confidence regarding use of LI-ESWT for ED patients.

**PATIENT SUMMARY:** We reviewed 14 studies of men who received low-intensity extracorporeal shock wave treatment (LI-ESWT) for erectile dysfunction (ED). There was evidence that these men

experienced improvements in their ED following LI-ESWT.

Copyright © 2016 European Association of Urology. Published by Elsevier B.V. All rights reserved.

**KEYWORDS:** Clinical outcome; Erectile dysfunction (ED); International Index of Erectile Function (IIEF); Low-intensity extracorporeal shock wave therapy (LI-ESWT); Meta-analysis

PMID: 27321373 DOI: [10.1016/j.eururo.2016.05.050](https://doi.org/10.1016/j.eururo.2016.05.050)

---

**Publication type, Grant support**

---

**LinkOut - more resources**

---

**PubMed Commons**

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)