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Review

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# Low-level Laser Therapy for Treatment of Neurosensory Disorders After Orthognathic Surgery: A Systematic Review of Randomized Clinical Trials

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## Abstract

**Background:** Low-level laser has been widely used in Dentistry and many studies have focused on its application in oral surgeries. This study was conducted with the aim of searching for scientific evidence concerning the effectiveness of laser to reduce pain or paresthesia related to orthognathic surgery.

**Material and methods:** An electronic search was performed in PubMed, Scopus, Science Direct, LILACS, SciELO, CENTRAL, Google Scholar, OpenGrey, and ClinicalTrials.gov, up to November 2016, with no restrictions on language or year of publication. Additionally, a hand search of the reference list of the selected studies was carried out. The PICOS strategy was used to define the eligibility criteria and only randomized clinical trials were selected.

**Results:** Out of 1,257 identified citations, three papers fulfilled the criteria and were included in the systematic review. The risk of bias was assessed according to the Cochrane Guidelines for Clinical Trials and results were exposed based on a descriptive analysis. One study showed that laser therapy was effective to reduce postoperative pain 24 hours ( $P=0.007$ ) and 72 hours ( $P=0.007$ ) after surgery. Other study revealed the positive effect of laser to improve neurosensory recovery 60 days after surgery, evaluated also by the two-point discrimination ( $P=0.005$ ) and sensory ( $P=0.008$ ) tests. The third study reported an improvement for general sensibility of 68.75% for laser group, compared with 21.43% for placebo ( $P=0.0095$ ), six months after surgery.

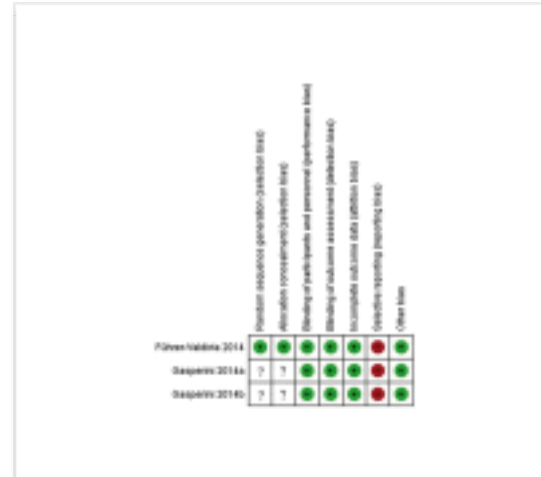
**Conclusions:** Individual studies suggested a positive effect of low-level laser therapy on reduction of postoperative pain and acceleration of improvement of paresthesia related to orthognathic

surgery. However, due to the insufficient number and heterogeneity of studies, a meta-analysis evaluating the outcomes of interest was not performed, and a pragmatic recommendation about the use of laser therapy is not possible. This systematic review was conducted according to the statements of PRISMA and was registered at PROSPERO under the number CRD42016043258.

## Figures



**Figure 1** 5 Flowchart showing the results of...



**Figure 2** 5 Risk of bias of the...

## Comment in

[Low-level laser therapy may reduce the time of recovery from paresthesia after orthognathic surgery.](#)

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