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Is Low-Level Laser Therapy Effective on Sensorineural Recovery After Bilateral Sagittal Split Osteotomy? Randomized Trial.

[Santos FT](#)¹, [Sciescia R](#)¹, [Santos PL](#)², [Weckwerth V](#)³, [Dela Coleta Pizzol KE](#)⁴, [Queiroz TP](#)⁵.

Author information

- 1 Surgeon-Dentist, Private Clinic and University of Araraquara (UNIARA), Araraquara, SP, Brazil.
- 2 Professor, Department of Health Sciences, Implantology Post Graduation Course, Dental School, University Center of Araraquara, UNIARA, Araraquara, SP, Brazil. Electronic address: pamela.odonto@gmail.com.
- 3 Surgeon-Dentist, Private Clinic and University of Sagrado Coração (USC), Bauru, SP, Brazil.
- 4 Professor, Department of Health Sciences, Orthodontics Post Graduation Course, Dental School, University Center of Araraquara, UNIARA, Araraquara, SP, Brazil.
- 5 Professor, Department of Health Sciences, Implantology Post Graduation Course, Dental School, University Center of Araraquara, UNIARA, Araraquara, SP, Brazil.

Abstract

PURPOSE: When performing a sagittal osteotomy of the mandibular ramus, one must consider the risk of long-term postsurgical sensory abnormalities from lesions to the inferior alveolar nerve. One treatment for these changes is low-level **laser therapy** (LLLT). Thus, the aim of this research was to evaluate the effectiveness of LLLT on sensorineural recovery after split ramus osteotomy of the mandible.

MATERIALS AND METHODS: This randomized, double-blinded, split-mouth design trial included patients who underwent advanced **surgery** of the mandible and then received LLLT on 1 side of the mandible (experimental) and a random placebo (control) treatment on the opposite site. Patients were divided into 2 groups: group 1 was treated during the short postoperative period (within 30 days) and group 2 was treated for persistent sensory abnormalities during the late postoperative period (6 months to 1 yr). Each patient received 5 LLLT and control sessions with intervals of 3 to 4 weeks between sessions. The experimental side in each patient received LLLT in the extraoral area (mandibular ramus and entire length of the inferior alveolar nerve to the mental region) and the intraoral area (mental foramen region). The control side received simultaneous placebo treatments. The sensorineural response was analyzed before the onset of treatment and after each LLLT and

control session using the Semmes-Weinstein monofilament test.

RESULTS: Twenty adult patients (mean age, 35.6 years; 70.0% women) showed improvement in the experimental and control sides during the follow-up period. However, the experimental side in groups 1 and 2 exhibited a marked improvement in sensorineural recovery over the course of the sessions, and group 1 had the best results.

CONCLUSION: LLLT was effective in the recovery from sensorineural disorders after orthognathic **surgery** during the short postoperative period, particularly in the fifth session.

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