

PubMed

**Format:** Abstract

Full text links

Ann Maxillofac Surg. 2019 Jan-Jun;9(1):48-52. doi: 10.4103/ams.ams\_241\_18.



# Radiographic Evaluation of Low-Level Laser Therapy-Enhanced Maxillary Sinus Augmentation with Simultaneous Dental Implant Placement.

Mehdiyev I<sup>1</sup>, Gülsen U<sup>2</sup>, Sentürk MF<sup>3</sup>, Sayan NB<sup>4</sup>.

## Author information

- 1 Private Clinic, Baku, Azerbaijan.
- 2 Department of **Oral** and Maxillofacial **Surgery**, Faculty of Dentistry, Bulent Ecevit University, Zonguldak, Turkey.
- 3 Department of **Oral** and Maxillofacial **Surgery**, Faculty of Dentistry, Süleyman Demirel University, Isparta, Turkey.
- 4 Private Clinic, Ankara, Turkey.

## **Abstract**

**BACKGROUND:** To evaluate the effect of low-level **laser therapy** (LLLT) on bone healing in patients undergoing bilateral sinus lifting and simultaneous dental implant application.

**METHODS:** Twelve patients with total/partial posterior maxillary edentulism who needed bilateral sinus bone augmentation were included in the study. Dental implants were inserted in the same session. LLLT ( $\lambda = 630\text{-}660\text{ nm}$ ,  $25\text{ mW/cm}^2$ , 6 min) was used for one operation side on the 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> days, whereas contralateral side served as control side. Preoperative and postoperative 1<sup>st</sup>, 3<sup>rd</sup>, and 6<sup>th</sup> month orthopantomograms were obtained using the aluminum step-wedge technique. Optic density analyses were performed using a Cardinal Health Digital Densitometer (Fluke Biomedical 07-443) with 1 mm diameter. Digital densitometry results were obtained as the equivalent aluminum thickness for each radiograph. These data were used to evaluate the changes in optical bone density and to compare the treatment side with the control side for each patient.

**RESULTS:** The LLLT side showed better results than the control side according to the densitometry results. Increase in the bone density at all the postoperative intervals was statistically significant ( $P < 0.05$ ).

**CONCLUSIONS:** LLLT enhances bone regeneration in sinus augmentation with simultaneous

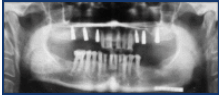
dental implant placement.

**KEYWORDS:** Dental implant; low-level **laser therapy**; maxillary sinus augmentation; radiographic evaluation

PMID: 31293929 PMCID: [PMC6585224](#) DOI: [10.4103/ams.ams\\_241\\_18](#)

**Free PMC Article**

**Images from this publication.** [See all images \(4\)](#) [Free text](#)



**Conflict of interest statement**

**LinkOut - more resources**