



# WESTSIDEOMS ORAL SURGERY & DENTAL IMPLANT CENTER

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Winter 2017 ~ A Quarterly Update

Dear Colleague:

Each year we continue to see growth and development in our practice accompanied by an increase in treatment success. Through this quarterly newsletter, we wish to share with you some of the latest developments in oral surgery and implant dentistry, as well as open communication with your office.

If we can provide any additional information, or if you would like to see an article on a particular topic in our next issue, please do not hesitate to call. We appreciate the trust you place in us by allowing us to participate in the care of your patients.

Regards,

*Dr. Rupi Dhadli*

## Smoking May Lead to Marginal Bone Loss around Non-submerged Implant during Bone Healing by Altering Salivary Microbiome

Duan X, Wu T, et al.  
*J Periodontol.* 2017 Aug 28:1-23

**T**his prospective and controlled study elucidates the impact of smoking on salivary microbiome and its further influence on marginal bone loss around the implant during a 3-month bone healing. The saliva samples were collected preoperatively from 20 periodontally healthy patients with single-tooth replacement in posterior mandible jaw: smokers (n=10) and non-smokers (n=10). MiSeq sequencing of 16S rRNA gene amplicons was used to characterize the salivary microbiome. Each subject received an implant surgery after oral clinical assessment and the marginal bone loss around the implant was measured during a 3-month healing period.

In total, 871,389 sequences were compared against the HOMD database for bacterial identification. Microbial signatures of smokers exhibited lower diversity and richness, with a significant decreased in uncultured

species. The phyla Gracilibacteria, and Saccharibacteria showed a significantly decrease in smokers. The genera Streptococcus, Lachnoanaerobaculum, Stomatobaculum and Eubacterium were significantly increased in smokers, while Selenomonas, Selenomonas [G-3] and Catonella were significantly decreased. Specifically, *P. gingivalis* showed significantly more abundant in smokers, which was positively related with the severity of MBL during bone healing. *Smoking shapes the salivary microbiome in states of clinical health, and further may interfere with the marginal bone loss during bone healing by creating high-at-risk-for-harm communities. Understanding of the distinctly divergent oral microbiome in smokers and non-smokers is a base for personalized therapeutics for this high-risk cohort, and also a base for further study on the pathological mechanisms.*

## Anterior Single Implants with Different Neck Designs: 5 Year Results

den Hartog L, Meijer HJA, et al.  
*Implant Dent Relat Res.* 2017 May 23

**T**he design of the implant neck might be significant for preservation of marginal bone. The purpose of this study was to compare the 5-year radiographic and clinical outcome of single anterior implants provided with a smooth neck, a rough neck or a scalloped rough neck. Ninety three patients with a missing anterior tooth in the maxilla were included. At random, patients received an

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Dr. Dhadli is dual degreed Oral and Maxillofacial Surgeons both a physician and dental surgeon. Dr. Dhadli attended Dental School and Medical School at Case Western Reserve University. She furthered her training and education through a 5 year intensive residency program in Oral and Maxillofacial Surgery and Anesthesia at University Hospitals of Cleveland, OH, Mt. Sinai Medical Center, Rainbow Babies and Children Hospital, and Metrohealth Medical Center in Cleveland, OH.



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## Anterior Single Implants...continued

implant with a 1.5 mm smooth neck ("smooth group"), a rough neck with grooves ("rough group") or a scalloped rough neck with grooves ("scalloped group"). Implants were installed in healed sites. Follow-up visits were conducted after final crown delivery and 1 year and 5 years later.

Scalloped implants showed significantly more initial marginal bone resorption. The total amount of bone loss was 1.26 mm in the smooth group, 1.20 mm in the rough group and 2.28 mm in the scalloped group. Survival rates were 96.2% for the smooth and scalloped group and 100% for the rough group. *Scalloped implants showed deeper pocket depths, more bleeding and more technical complications. There were no differences in esthetic outcome or in patient satisfaction. For anterior single tooth replacements, scalloped implants show less favorable radiographic and clinical outcome compared to regular implants with a smooth neck or rough neck.*

## How Effective Is the Tent Screw Pole Technique Compared to Other Forms of Horizontal Ridge Augmentation?

Deeb GR, Tran D, et al.  
*J Oral Maxillofac Surg.* 2017 Jun 13

**T**he tent screw pole technique is one of the methods available for practitioners to perform horizontal ridge augmentation to facilitate dental implant placement. The purpose of this study was to evaluate the efficacy of the tent screw pole technique for horizontal ridge augmentation and to compare the results with those of the tunnel technique and open ridge augmentation. In this retrospective cohort study, 35 patients underwent horizontal ridge augmentation with the tent screw pole technique, a 1:1 ratio of mineralized freeze-dried bone allograft and particulate bovine hydroxyapatite, and a resorbable collagen membrane. The incidence of early wound dehiscence and membrane exposure, the number of courses of antibiotics and postoperative visits required for their management, and the number of sites that subsequently had successful implant placement were recorded. These parameters were compared with those in 21 patients who had undergone horizontal ridge augmentation by the tunnel technique and 31 patients who had been treated using an open procedure and a resorbable polytetrafluoroethylene (PTFE) membrane in the authors' previous study.

Implant placement rate was similar for all 3 methods (71 to 97%). However, there were significant differences among the 3 surgical techniques for membrane exposure and wound

dehiscence, graft loss, courses of antibiotics, and postoperative visits. The PTFE method consistently had the highest rate of complications, whereas the tent screw and tunnel techniques were comparable. *All 3 techniques allowed a high rate of implant placement; however, the PTFE technique was consistently associated with increased postoperative complications compared with the other 2 methods. The tent screw technique might be more favorable than the tunnel technique in cases in which the bony deficiency is flat.*

## The Role of Occlusion in Implant Therapy: A Comprehensive Updated Review

Sheridan RA, Decker AM, et al.  
*Implant Dent.* 2016 Dec;25(6):829-838

**O**ccusal overload may cause implant biomechanical failures, marginal bone loss, or even complete loss of osseointegration. Thus, it is important for clinicians to understand the role of occlusion in implant long-term stability. This systematic review updates the understanding of occlusion on dental implants, the impact on the surrounding peri-implant tissues, and the effects of occlusal overload on implants. Additionally, recommendations of occlusal scheme for implant prostheses and designs were formulated. Two reviewers completed a literature search using the PubMed database and a manual search of relevant journals. Relevant articles from January 1950 to September 20, 2015 published in the English language were considered.

Recommendations for implant occlusion are lacking in the literature. Despite this, implant occlusion should be carefully addressed. Recommendations for occlusal schemes for single implants or fixed partial denture supported by implants include a mutually protected occlusion with anterior guidance and evenly distributed contacts with wide freedom in centric relation. *Suggestions to reduce occlusal overload include reducing cantilevers, increasing the number of implants, increasing contact points, monitoring for parafunctional habits, narrowing the occlusal table, decreasing cuspal inclines, and using progressive loading in patients with poor bone quality. Protecting the implant and surrounding peri-implant bone requires an understanding of how occlusion plays a role in influencing long-term implant stability.*



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