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Upcoming Sessions

Dr. Resnik's FEATURED ARTICLE

Does Vitamin D Deficiency Lead To Early Implant Failure?



DALLAS
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Session 4

September 24-25, 2021

Treatment of the Posterior Maxilla:
Osteotome & Lateral Wall Technique

Session 5

November 10-11, 2021

Immediate Placement & Loading,
Soft Tissue Considerations



ORLANDO
Margaritaville Resort Hotel
Orlando Florida

Session 1

September 10-11, 2021

Socket Grafting, Treatment Planning,
& Implant Placement into Abundant

The goal of successful dental implant treatment is for osseointegration of the dental implant. Because osseointegration is dependent on bone metabolism, it has been postulated that patients exhibiting Vitamin D deficiency may have adverse healing on bone formation around dental implants.

VITAMIN D

Vitamin D, in its inactive form (vitamin D3 or cholecalciferol), is a steroid hormone that is acquired through diet or from exposure to the sun (synthesized in the skin from cholesterol).¹

Because Vitamin D is biologically inert, it must be activated by two hydroxylation's in the body to become

active. The first hydroxylation takes place in the liver and the second hydroxylation occurs in the kidney, resulting in the physiologically active 5-dihydroxyvitamin D [1,25(OH)2D], also known as "calcitriol".²

VITAMIN DEFICIENCY

Vitamin D has been associated with the health of the brain, cardiovascular, respiratory, skin, and immune systems. In addition, Vitamin D increases the production of extracellular matrix proteins by osteoblasts.³ When there exist reduced levels of 1,25 (OH)2D, impaired absorption of calcium and phosphorus will result. This may cause an increased osteoclast activity, resulting in bone resorption and decreased bone mineral density.

MISCH RESNIK COURSE SCHEDULE

SURGICAL SESSION Dallas

Session 4

September 24-25, 2021

Treatment of the
Posterior Maxilla:
Osteotome & Lateral Wall
Technique

Session 5

November 12-13, 2021

Immediate Placement
& Loading, Soft Tissue
Considerations

COMPLICATIONS Las Vegas

October 15-16, 2021
CAESAR'S PALACE

Avoiding & Treatment of
Implant Complications

SURGICAL SESSION Orlando

Session 1

September 10-11, 2021

Socket Grafting,
Treatment Planning, &
Implant Placement into
Abundant

Session 2

October 29-30, 2021

Multiple Implant Place-
ment and Treatment of
the Edentulous Ridge

CBCT BOOT CAMP

July 22, 2021

Session 3

July 23-24, 2021

Implant Placement & Bone
Augmentation into
Compromised Sites

Does Vitamin D Deficiency Lead To Early Implant Failure?



Serum 25-hydroxy vitamin D (25-OH) is the most abundant Vitamin D metabolite and primary circulating form of Vitamin D which is considered the best indicator of a patient's Vitamin D status.⁴ According to the National Institutes of Health, the following are associated blood levels:⁵

Deficient: <12 ng/mL
Insufficient: 12-20 ng/mL
Ideal: >20 ng/mL

Vitamin D deficiency is most commonly due to inadequate dietary intake and insufficient exposure to sunlight. It is a worldwide public health concern affecting up to **70%** of the United States Population and up to **85 %** of the elderly.⁶ At this time, it is currently believed that daily consumption of Vitamin D should be approximately 2000 IU (50 mcg).

STUDIES OF VITAMIN DEFICIENCY

To date, most documentation showing the relationship between Vitamin D and implant failure in the available literature is with case studies and animal research. There exist very few studies in dental journals evaluating the relationship between Vitamin D deficiency and early implant failure.

Animal Studies:

- Liu et. al reported that Vitamin D increases implant integration in mice with chronic kidney disease.⁷
- Kelly et. al. placed 1 mm x 2 mm implants in rats and concluded that Vitamin D deficiency results in impaired integration.⁸
- Xiong et. al. showed that Vitamin D supplements increases implant integration in mice.⁹

Human Studies:

- Alvim-Pereira et al **found no association** between vitamin D receptor gene polymorphism and dental implant loss.¹⁰
- Schulze-Späte U concluded **no relationship** between Vitamin D deficiency and bone growth in maxillary sinus augmentations.¹¹
- Mangano F et al found **no significant** relation with implant failure in 822 patients that were Vitamin D deficient.¹²
- Mangano F et. al. in a second study with 885 patients concluded **no significant relationship** between implant failure and Vitamin D deficiency.¹³

CONCLUSION

In conclusion, when evaluating studies on Vitamin D deficiency and dental implants, animal studies have shown a correlation with implant failure. However, as of this time, **no conclusive human study has shown a relationship.** Therefore, much broader, prospective and well-controlled studies are needed. In the interim, the implant clinician should be aware that patients with severe Vitamin D deficiency **may** possibly have an increased morbidity with respect to dental implant failure, however it is certainly **not an absolute contraindication.**

¹Gunton JE, Girgis CM. Vitamin D and muscle. *Bone Rep.* 2018;8:163–167. doi:10.1016/j.bonr.2018.04.004.

²Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium and Vitamin D.* Washington, DC: National Academy Press, 2010.

³Reid IR, Bolland MJ, Grey A. Effects of vitamin D supplements on bone mineral density: a systematic review and meta-analysis. *Lancet.* 2014;383(9912):146–155.

⁴Rosen CJ. *Clinical practice. Vitamin D insufficiency.* *N Engl J Med.* 2011;364(3):248–254.



WhatsApp

Did You Know ?

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FAILURE TO TIMELY DIAGNOSE: PERI-IMPLANTITIS vs SQUAMOUS CELL CARCINOMA

Dr. Ronald J. Trevisani is a Board Certified Oral and Maxillofacial Surgeon, Pharmacist, and an Attorney. As a Misch Institute faculty member, he has a passion for teaching clinical dentistry as well as advising dentists from a legal perspective on protecting your assets.

WHAT IS FAILURE TO TIMELY DIAGNOSE?

A cause of action (grounds for a lawsuit) in which the patient asserts that a doctor failed to recognize one or more obvious signs of a treatable disease at an early stage, resulting in a decrease in the patients lifespan, quality of life, loss of consortium (spouses claim that injury resulted in a altered relationship with patient), etc.

Case Example #1:

Recently, OMSNIC (Oral Surgery Malpractice Insurance Company) shared a case report where a general dentist and an oral surgeon were managing a lesion associated with a dental implant. After approximately seven months, the lesion was diagnosed as a neoplasm. Because the final diagnosis was not diagnosed in a timely fashion, comprehensive litigation resulted against the general dentist and oral surgeon.¹

Case Example #2:

In my Oral Surgery practice over the last 20 years, I have received many referrals for biopsies of various types of lesions. One example that I would like to share with you is a patient that presented to her general dentist with the chief complaint of "biting her tongue". An implant was placed in the area "a few years ago." Clinical exam by the general dentist revealed a sore on her tongue and the gingiva adjacent to the implant #29. The dentist agreed that she was biting her tongue and modified the crown to relieve the malocclusion and noted that there may be "some inflammation underneath the bridge and around the implant." One week later, symptoms persisted. At this point, chlorhexidine irrigation around the implant (i.e. suspected peri-implantitis) was completed along with an antibiotic prescription. After one week, the lesion on her lateral border of her tongue was larger. Patient was then referred to my office, in which a biopsy was performed with a diagnosis of Squamous Cell

Carcinoma. The patient was referred to an ENT surgeon for surgical resection and treatment. In this case, the pathology was diagnosed and treated within a timely fashion (4-6 weeks). Thus, a successful diagnosis and treatment resulted.

Summary:

The recent report shared by OMSNIC revealed a case in which a general dentist and oral surgeon evaluated and re-evaluated the patient with similar circumstances for over seven months. A biopsy was not performed during this time, which resulted in a delay in diagnose and treatment. The patient ultimately went to her primary care physician and ENT, which resulted in aggressive surgery and extensive morbidity. Because of the delay in treatment, both the general dentist and oral surgeon were named in a civil suit and ultimately settled the case out of court.

Take Home Message:

- Even though a lesion associated with an implant may appear to be benign peri-implantitis, if resolution does not occur in a reasonable time period (~ 2 weeks), a biopsy or referral should be considered.
- Remember that Squamous Cell Carcinomas may appear as benign lesions such as inflamed tissue, epuli fissuratum, granulation tissue, pyogenic granulomas, and chronic periodontitis.
- Always schedule patients for continued routine implant maintenance appointments and complete thorough examinations.
- Do not delay in referring or performing a biopsy on questionable lesions.
- If pathology is present, do not hesitate to remove the implant prosthesis for ease of evaluation.
- Always accurately document treatment decisions, referrals, and follow up. More details next month. See ya then!!!

¹OMS Guardian: Second quarter 2021, Closed Case Summary: 2021 Clinical

Vol. 32, No.2 and Walter Patient Referrals,

QUESTIONS OF THE MONTH

1 MEDICATION QUESTION OF THE MONTH?



This adjunct to common analgesics after surgery has been shown to increase PAIN RELIEF by approximately 5-10%?

- Caffeine
- Diet Cola Drinks (e.g. Diet Coke, Diet Pepsi)
- Orange Juice
- Warm Salt Water Rinses

2 RADIOLOGY QUESTION of the MONTH

This patient suffered from chronic headaches. Upon CBCT evaluation, a radiopacity (yellow arrow) was noted which is consistent with?

- Maxillary Rhinosinusitis
- Sphenoid Sinus Sinusitis
- Ethmoid Rhinosinistis
- Nasal Polyps



3 IMPLANT STUDY of the MONTH

A systematic review and meta-analysis was completed comparing immediate implant placement in **infected extraction sockets** vs. **non-infected extraction sockets** in terms of implant survival and function.

Conclusions: There were no significant differences in infected vs. non-infected comparing:

- Implant survival rates
- Marginal bone level
- Marginal gingival level
- Bleeding index
- Probing depth

Saijeva, Aza, and Gintaras Juodzbalsys. "Immediate implant placement in non-infected sockets versus infected sockets: a systematic review and meta-analysis." Journal of oral & maxillofacial research 11.2 (2020).

**DON'T
MISS OUT!!**

COURSES ARE FILLING UP QUICKLY

Call 407-256-8082

or

visit www.mischresnik.com to register

SOCKET GRAFTING, CBCT TREATMENT PLANNING, and IMPLANT PLACEMENT into ABUNDANT BONE

September 10 -11, 2021

Orlando, Florida

SOCKET GRAFTING PROTOCOL

- Atraumatic Extractions
- Socket Grafting Protocols
- 4 vs 5 Wall Socket Protocol

IMPLANT PLACEMENT

- Osseodentification
- Guided Implant Placement
- Use of CBCT
- Guided Surgery Technique
- Flap Advancement Techniques

CBCT TREATMENT PLANNING

- Anatomy Identification
- Template Design
- 3D Printing

*Be one of the 97% of Misch Resnik
Graduates that are performing im-
plant placement and bone grafting
procedures*

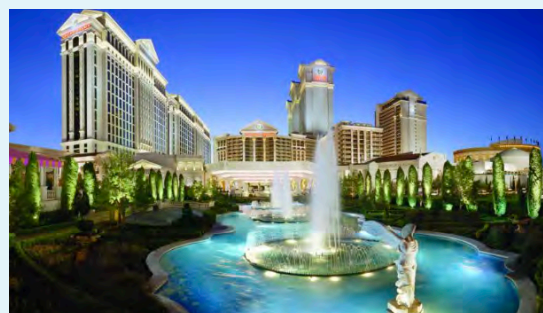
DENTAL IMPLANT COMPLICATIONS

October 15 - 16, 2021

Caesar's Palace, Las Vegas

The **very popular** Dental Implant Complications course is back with overwhelming interest and support. This course will be given on October 15-16, 2021 in Las Vegas at the Caesars Palace Resort & Casino. The in-depth curriculum will give the implant clinician the necessary knowledge and tools to effectively determine the etiology, prevention, and management of over 500 different surgical, prosthetic, and peri-implant complications.

- Medical/Medication Complications
- CBCT Related Complications
- Intra-Operative/Implant Positioning Complications
- Bone Grafting Complications
- Sinus Grafting Complications
- Fixed/Removable Prosthesis Complications
- Peri-Implant Complications
- Treatment of Ailing/Failing Implant
- Legal Considerations in Implant Dentistry



This course is a **MUST** for any clinician or staff member.
Reserve your seat now as this course usually sells **FAST!**

MR

ANSWERS to the QUESTIONS of the MONTH



1 MEDICATION QUESTION OF THE MONTH

ANSWER:

A. Caffeine (>100mg)

Derry, Christopher J., Sheena Derry, and R. Andrew Moore. "Caffeine as an analgesic adjuvant for acute pain in adults." Cochrane Database of Systematic Reviews 12 (2014).

2 RADIOLOGY QUESTION OF THE MONTH

ANSWER: B (Right Sphenoid Sinusitis)

THE IMPLANT BUSINESS ESSENTIAL CONTINUUM

INTRODUCING
THE IMPLANT BUSINESS ESSENTIALS CONTINUUM
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ROGER LEVIN, DDS

DETAILS

12 SESSIONS
• 11 online interactive sessions
• Two-day live interactive workshop in Irvine, CA

EARN CONTINUING EDUCATION (CE) CREDITS
• 23 CE credits

PRICING
• **Early bird price before July 31, 2021: \$1,895**
• Regular tuition price: \$2,495

*Course tuition does not cover airfare and hotel cost. Attendees are expected to cover their own airfare and hotel cost.

cont'd from pg 2

⁵NIH Fact Sheet for Health Professionals, Vitamin D. March 24, 2020. Accessed 8/5/20. pandemic? Am J Clin Nutr. 2016;103:1033–44.

⁶Cashman KD, Dowling KG, Škrabáková Z, Gonzalez-Gross M, Valtueña J, De Henauw S, et al. Vitamin D deficiency in Europe:

⁷Liu W, Vitamin D supplementation enhances the fixation of titanium implants in chronic kidney disease mice. PLoS One. 2014;9:e95689.

⁸Kelly J, Vitamin D and bone physiology: demonstration of vitamin D deficiency in an implant osseointegration rat model. J Prosthodont. 2009;18:473–478.

⁹Xiong Y, 1α,25-dihydroxyvitamin D3 increases implant osseointegration in diabetic mice partly through FoxO1 inactivation in osteoblasts. Biochem Biophys Res Commun. 2017;494:626–633.

¹⁰Alvim-Pereira F, Montes CC, Thome G, Olandoski M, Trevilatto PC. Analysis of association of clinical aspects and vitamin D receptor gene polymorphism with dental implant loss. Clin Oral Implants Res. 2008;19(8):786–795.

¹¹Schulze-Späte U. Systemic vitamin D supplementation and local bone formation after maxillary sinus augmentation—a randomized, double-blind, placebo-controlled clinical investigation. Clin Oral Implants Res. 2016;27(6):701–6.

¹²Mangano F, Is low serum vitamin D associated with early dental implant failure? A retrospective evaluation on 1,625 implants placed in 822 patients. Mediators Inflamm. 2016;2016:

¹³Mangano FG. Low serum vitamin D and early dental implant failure: Is there a connection? A retrospective clinical study on 1,740 implants placed in 885 patients. J Dent Res Dent Clin Dent Prospr. 2018;2018:174–182.

