

# Trabecular Metal<sup>™</sup> Implant



ZimVie DENTAL SOLUTIONS

# The BioBoost Effect Scientifically Super...Natural

Discovery of the BioBoost Effect unveils the science behind the seemingly super natural response to the Trabecular Metal Implant. The BioBoost Effect is a multiplication of naturally-occurring growth factors to deliver faster healing and earlier bone formation than traditional implants.<sup>1-8</sup>

The BioBoost Effect, only available on the Trabecular Metal Implant, is the result of a proprietary combination of cancellous-like porosity and highly-biocompatible tantalum.<sup>9-11</sup> With mounting evidence of this clinical advantage in Rapid Recovery, Risk Management, and Revision Therapy cases, harness the healing power of the BioBoost Effect and take your practice to the next level.



## **Rapid Recovery**

### Accelerate healing with a 2-week final loading protocol<sup>12-15</sup>

The BioBoost Effect accelerates healing and bone formation through the multiplication of naturally-occurring growth factors related to bone formation, wound healing, and vascularization.<sup>3,6-8</sup> Several studies have documented the Trabecular Metal Implant in a 2-week final loading protocol with a 97% to 100% survival rate after up to five years follow up.<sup>12-14</sup>

- Early bone healing and attachment through enhanced gene expression compared to traditional implants<sup>3,6</sup>
- Significantly higher up regulation of growth factors related to bone healing than traditional implants<sup>3,6</sup>
- 97.2% survival after five years, two-week final loading protocol<sup>12</sup>
- 100% survival after four years, two-week final loading protocol in extraction sites<sup>14</sup>

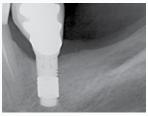
Images courtesy of Dr. Markus Schlee, Forscheim, German



Six-month result.



Two-year result.



Five-year result.

## **Rapid Recovery Meets Rapid Restoration**

Complete the case in weeks, not months, and in as little as three appointments, with the Trabecular Metal Implant and the BellaTek<sup>®</sup> Encode<sup>®</sup> Impression System. The BellaTek Encode Healing Abutment functions as a healing abutment impression coping and scan body that can be scanned or impressed and sent to your Encode Empowered Laboratory for fabrication of a titanium or zirconia BellaTek definitive abutment.



Fig. 1a



Fig. 2



Fig. 1b



Fig. 3

**Appointment 1** - Seat an Encode Healing Abutment at the time of Trabecular Metal Implant placement (Figs. 1a and 1b).

**Appointment 2** - Take a digital or traditional PVS impression of the Encode Healing Abutment at the time of suture removal. Send the impression to your Encode Empowered Laboratory for final abutment design and restoration fabrication (Fig. 2).

**Appointment 3** - Seat the final, patientspecific BellaTek Abutment and crown (Fig. 3).

## **Risk Management**

## Expand treatment in poor bone and impaired healing<sup>16-26</sup>

Several studies have shown that Trabecular Metal Implants perform well in patients with risk factors such as diabetes, rheumatoid arthritis, prior oral infection, the effects of cancer treatment and poor bone quality.<sup>16-26</sup> The Trabecular Metal Implant may offer beneficial conditions for healthy implant integration in underserved patient populations.

- 100% survival after one year in postablative cancer patients<sup>21</sup>
- 97.2% survival after three years in patients with systemic disease<sup>22</sup>
- Faster bone healing around Trabecular Metal Implants than traditional implants in diabetic and osteopenic patients<sup>7,8</sup>



Postablative cancer patient after head and neck radiation and chemotherapy.

Images courtesy of Dr. Suheil Boutros, Grand Blanc, Michigan



Trabecular Metal Placement in very soft, porotic bone.



Successful restoration of function and aesthetics, fouryear result.

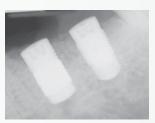
## **Revision Therapy**

### Leverage the healing advantage in implant replacement

Patients with a previously failed implant are at a higher risk for another failure.<sup>27</sup> Therefore, it is important to treat the cause of the initial failure and select the replacement implant very carefully. Unlike conventional implants, Trabecular Metal Implants offer BioBoost Technology for the healthy ingrowth of vascularized bone as well as the potential for enhanced bone healing compared to conventional titanium implants,<sup>1-8</sup> making them an excellent choice in revision therapy.



Significant peri-implantitis resulted in removal of implants after two years in function.



Revision with a Trabecular Metal Implant (left) and TSV Implant (right).



Six-year result.

# **Ordering information**

**Trabecular Metal Dental Implant, MTX<sup>®</sup> Surface, Fully Textured with Microgrooves** Includes Fixture Mount/Transfer and Cover Screw.

Implant Diameter	Implant	Internal Hex Connection	Implant Length			
	Platform		10 mmL	11.5 mmL	13 mmL	16 mmL
3.7 mmD	<b>3</b> .5 mmD	2.5 mmD	TMTB10	TMTB11	TMTB13	TMTB16
4.1 mmD	<b>3</b> .5 mmD	2.5 mmD	TMT4B10	TMT4B11	TMT4B13	٠
4.7 mmD	• 4.5 mmD	2.5 mmD	TMTWB10	TMTWB11	TMTWB13	٠
6.0 mmD	9.7 mmD	3.0 mmD	TMT6B10	TMT6B11	TMT6B13	٠

Trabecular Metal Dental Implants with 0.5 mm Machined Collar, MTX Surface and Microgrooves

Implant	Implant Platform	Internal Hex Connection	Implant Length				
Diameter			10 mmL	11.5 mmL	13 mmL	16 mmL	
3.7 mmD	<b>3</b> .5 mmD	2.5 mmD	TMMB10	TMMB11	TMMB13	TMMB16	
4.1 mmD	<b>3</b> .5 mmD	2.5 mmD	TMM4B10	TMM4B11	TMM4B13	٠	
4.7 mmD	• 4.5 mmD	2.5 mmD	TMMWB10	TMMWB11	TMMWB13	٠	1
6.0 mmD	9.7 mmD	3.0 mmD	TMM6B10	TMM6B11	TMM6B13	٠	1

Includes Fixture Mount/Transfer and Cover Screw.

#### TSV° BellaTek° Encode° Healing Abutments

Healing collar and impression coping enabling definitive abutment design by your Encode Empowered Laboratory.

Emergence	Implant	Cuff Height				
Profile	Platform	3.0 mm	5.0 mm	7.0 mm		
3.8 mmD	<b>3.5 mmD</b>	TEHA3383	TEHA3385	TEHA3387		
5.0 mmD	<b>3.5 mmD</b>	TEHA3503	TEHA3505	•		
5.0 mmD	• 4.5 mmD	TEHA4503	TEHA4505	•		
5.6 mmD	• 4.5 mmD	TEHA4563	TEHA4565	TEHA4567		
6.0 mmD	• 4.5 mmD	TEHA4603	TEHA4605	•		
6.8 mmD	9.7 mmD	TEHA5683	TEHA5685	•		



References: 1 Spinato S, Zaffe D, Felice P, Checchi L, Wang HL. A Trabecular Metal implant 4 months after placement: clinical-histologic case report. Implant Dent. 2014;23(1):3-7. 2 de Arriba CC, Alobera Gracia MA, Coelho PG, Neiva R, Tarnow DP, Del Canto Pingarron M, Aguado-Henche S. Osseoincorporation of Porous Tantalum Trabecular-Structured Metal: A Histologic and Histomorphometric Study in Humans. Int J Periodontics Restorative Dent. 2018;38(6):1-7. 3 Bencharit S, Barros S, Morelli T, Offenbacher S. Biological Effects of Porous Tantalum Trabecular Metal in the Oral Cavity. In Academy of Osseointegration. 2016;San Diego, CA. 4 Lee JW, Wen HB, Gubbi P, Romanos GE. New bone formation and trabecular bone microarchitecture of highly porous tantalum compared to titanium implant threads; A pilot canine study. Clin Oral Implants Res, 2018;29(2):164-174, 5 Kim DG, Jeong YH. Min KH, Lee JW, Wen HB. Porous Tantalum Increases Interfacial Bone Tissue Mineralization Compared to Titanium Threaded Section of Implants. In Academy of Osseointegration. 2016;San Diego, CA. 6 Meirelles L, Dodo C, Mendonca G, Fraser D, Sartori E, Funkenbusch P. Biomechanical analysis and osteogenic gene expression on porous tantalum implants placed in a gap healing model. Clin Oral Impl Res. 2015;26(Suppl. 12). 7 Kim SJ, Bencharit S, Morelli T, Offenbacher S, Barros SP. Transcriptomic analysis of wound healing around tantalum and titanium in diabetes. in IADR. 2017;San Francisco, CA. 8 Byrd KM, Hefni EK, Barros SP, Yu N, Kim SJ, Bencharit S, Morelli T, Offenbacher S. Transcriptomic Profiling of Tantalum Metal Implant Osseointegration in Osteopenic Patients. Accepted for publication in British Dental Journal, 2018. 9 Karageorgiou V, Kaplan D. Porosity of 3D Biomaterial Scaffolds and Osteogenesis. Biomaterials. 2005;26(27):5474-91. 10 Black J. Biological Performance of Tantalum. Clin Mater. 1994;16:167-173. 11 Matsuno H, Yokoyama A, Watari F, Uo M, Kawasaki T. Biocompatibility and osteogenesis of refractory metal implants, titanium, hafnium, niobium, tantalum, and rhenium. Biomaterials. 2001;22:1253-1262. 12 Wen HB, van der Schoor WP, van der Schoor AR, Schlee M. Immediate Nonocclusal Loading of Trabecular Metal-Enhanced Titanium Dental Implants in a Controlled Population: 5-Year Results. in The 103rd Annual Meeting of American Academy of Periodontology. 2017;Boston, MA. 13 Brauner E, Jamshir S, Di Carlo S, Pagnoni M, Guarino G, Pompa G, Immediate implant loading: a comparison of Trabecular Metal and Tapered Screw-Vent dental implants. OHDM. 2015;14(2):1-6. 14 Peron C, Romanos G. Immediate loading of tantalum-based implants in fresh extraction sockets. Long-term outcomes. in European Academy of Osseointegration. 2018;Vienna, Austria. 15 Bencharit S, Byrd WC, Hosseini B. Immediate placement of a porous-tantalum, Trabecular Metal-enhanced titanium dental implant with demineralized bone matrix into a socket with deficient buccal bone: a clinical report. J Prosthet Dent. 2015;113(4):262-9. 16 Soardi, CM, Zaffe D, Wang HL. Rehabilitation of Extremely Atrophic Maxillae with Mineralized Allograft and Highly Porous Dental Implants. in European Association for Osseointegration. 2014;Rome, Italy. 17 Edelmann AR, Patel D, Allen R, Gibson CJ, Best AM, Benharit S. Retrospective analysis of porous tantalum Trabecular Metal-enhanced titanium dental implants. Accepted for publication in the Journal of Prosthetic Dentistry, 2018. 18 Bianconi S, Bozzoli P, Del Fabbro M. Treatment of Postextraction Sites With Allograft-Stabilized Dental Implants: A Clinical Case Series. Implant Dent. 2017;26(1):37-45. 19 Schlee M, Pradies G, Mehmke WU, Beneytout A, Stamm M, Meda RG, Kamm T, Poiroux F, Weinlich F, del Canto Pingarron M, Crichton E, Poulet JB, Bousquet P. Prospective, Multicenter Evaluation of Trabecular Metal-Enhanced Titanium Dental Implants Placed in Routine Dental Practices: 1-Year Interim Report From the Development Period (2010 to 2011). Clin Implant Dent Relat Res. 2015;17(6):1141-53. 20 Tjaden A, Schlee M, van der Schoor P, van der Schoor A, Mehmke WU, Kamm T, Beneytout A, de Arriba CC, Bänninger L, Wen HB. Multicenter Studies of Porous Tantalum Trabecular Metal Implants: 4-Year Interim Results. in Academy of Osseointegration. 2016;San Diego, CA. 21 Brauner E, Guarino G, Jamshir S, Papi P, Valentini V, Pompa V, Pompa G. Evaluation of Highly Porous Dental Implants in Postablative Oral and Maxillofacial Cancer Patients: A Prospective Pilot Clinical Case Series Report. Implant Dent. 2015;24(5):631-7. 22 Peron C, Romanos G. Immediate Loading of Tantalum-Based Implants in Patients with Systemic Diseases Clinical and Radiographic Long-Term Outcomes. Academy of Osseointegration. 2017;Orlando, FL. 23 Peron C, Javed F, Romanos GE. Immediate Loading of Tantalum-Based Implants in Fresh Extraction Sockets in Patient With Sjogren Syndrome: A Case Report and Literature Review. Implant Dent. 2017;26(4):634-638. 24 Peron C, Romanos G. Immediate Loading of Trabecular Tantalum-based Implants placed in Infected Sites with Full Ceramic Restorations. 1-year Clinical Evaluation. in AAID. 2016;New Orleans, LA. 25 El Chaar E, Castano A. A Retrospective Survival Study of Trabecular Tantalum Implants Immediately Placed in Posterior Extraction Sockets Using a Flapless Technique. J Oral Implantol. 2017;43(2):114-124. 26 Battula S, Lee JW, Wen HB, Papanicolaou S, Collins M, Romanos GE. Evaluation of Different Implant Designs in a Ligature-Induced Peri-implantitis Model: A Canine Study. Int J Oral Maxillofac Implants. 2015;30(3):534-45. 27 Grossman Y, Levin L. Success and survival of single dental implants placed in sites of previously failed dental implants. J Periodontol. 2007;78:1670-4.

#### For more information visit ZimVie.com

ZimVie Dental 4555 Riverside Drive Palm Beach Gardens, FL 33410 Tel: +1-561-776-6700 Fax: +1-561-776-1272



Unless otherwise indicated, as referenced herein, all trademarks and intellectual property rights are the property of ZimVie Inc. or an affiliate; and all products are manufactured by one or more of the dental subsidiaries of ZimVie Inc. (Biomet 3i, LLC, Zimmer Dental, Inc., etc.) and marketed and distributed by ZimVie Dental and its authorized marketing partners. For additional product information, please refer to the individual product labeling or instructions for use. Product clearance and availability may be limited to certain countries/regions. This material is intended for clinicians only and does not comprise medical advice or recommendations. Distribution to any other recipient is prohibited. This material may not be copied or reprinted without the express written consent of ZimVie. ZV1546 REV A 09/23 ©2023 ZimVie. All rights reserved.

